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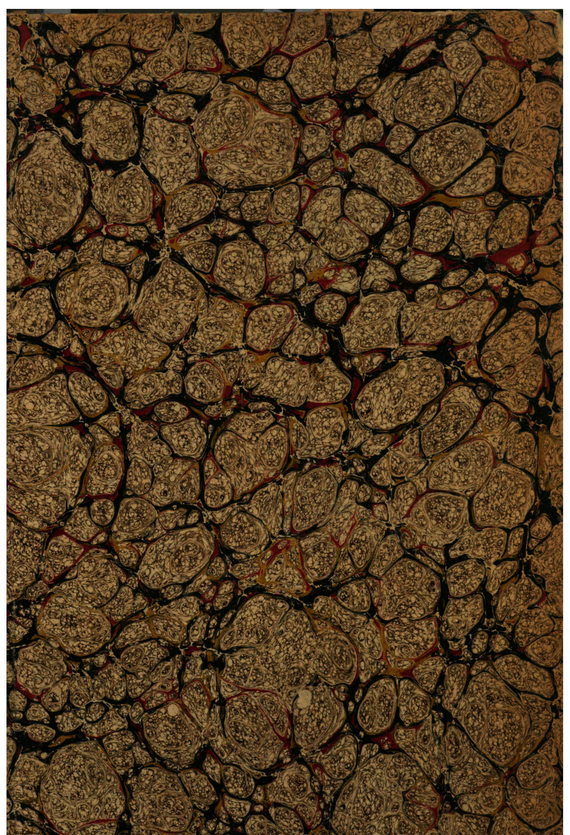
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Volume XVII New York, N. Y., U. S. A., October 3, 1907 Number 1

THE MOTOR WORLD

A trade paper giving the World's Motor News

Ten cents a copy—
Two dollars a year



SOLAR

Auto-mobile Gas Generators



Why Solar Gas Generators Always Satisfy. Because they embody the only correct principle of gas generation (wick feed) making flooding impossible. Are made round so as to enable each part to be drawn from 1 piece of heavy sheet brass (not 4 pieces soldered together). This absolutely removes the possibility of leakage and produces a steady supply of never failing gas.

Badger Brass Mfg. Co.
Kenosha, Wis. & N. Y. City

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3,622 Miles—No Tire Trouble

¶ If the man who buys the tires could see for a few days the letters received by us from users of

HARTFORD MIDGLEY TREAD TIRES
Clincher or Dunlop

particularly the letters that speak of durability, he would buy no other tire.

¶ Here is a sample letter:

Pueblo, Colo., September 10, 1907.

THE HARTFORD RUBBER WORKS CO.,
Hartford, Conn.

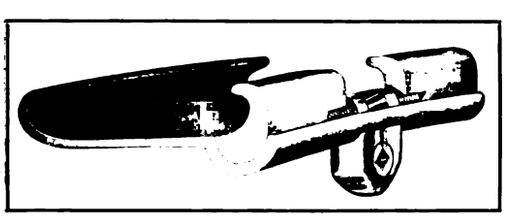
Gentlemen: Last April I purchased a large car and had it fitted with Hartford Clincher Midgley Tread Tires. Have just completed a trip to Maine and return and feel that I should write you about them. We left Pueblo June the 5th. Followed the Santa Fe Railroad as far as Great Bend, Kansas, then diverged to the Northeast through Abilene, Salina, Beatrice, Lincoln and Omaha. From Beatrice to Omaha we got caught in very heavy rains and had to work our way through mud and clay ruts, which in two days time practically wore off the rubber from all the tires, which left the canvas bare. Fearing trouble, I asked advice of one of the leading automobile men in Omaha, and he said we would have no trouble in getting as far as Chicago. There I showed them to your agent and he pronounced them safe, so continued on to Maine. While there the machine was in constant use.

On our return trip we came through Massachusetts and Connecticut, stopping at Hartford, where your factory is located. We came there with the intention of having the tires either recovered or securing new ones The total mileage to Hartford was 3,622, yet the rear tires had been inflated only once and there were no punctures. The treads were apparently as good as when we left Pueblo and would have been safe for the return trip. We secured new ones August 2d, and came home through Southern New York, skirted the Catskills and came over some very bad roads, in fact the worst on tires of any that we had struck, and arrived here Sept 2d. We did not have a puncture and did not have to inflate them, and they show but very little wear.

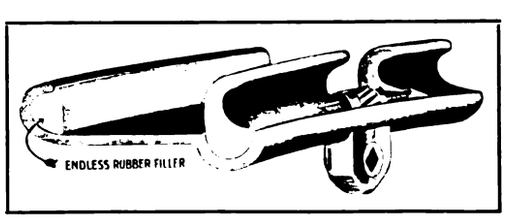
We had so great confidence in them before leaving Pueblo that we did not take even an outer casing, and we found our confidence well placed. We traveled 2,649 miles on our return trip from Hartford.

Yours very respectfully,
GEO. E. KING.





These cuts show the New Midgley Universal Rim, easily the greatest rim invention since the inception of the industry. This rim accomodates EVERY MAKE of Clincher or Dunlop tires, as well as every type of mechanically fastened tires, EXCEPT ONE. Standard measurements throughout, including inside diameter.



THE HARTFORD RUBBER WORKS CO., Hartford, Conn.

NEW YORK, 88 Chambers St. and 1769 Broadway; CHICAGO, 83 Michigan Ave.; BOSTON, 494 Atlantic Ave. and 1020 Boylston St.; CLEVELAND, 1831 Euclid Ave.; DETROIT, 256 Jefferson Ave.; DENVER, 1564 Broadway; PHILADELPHIA, 138 North 10th St.; BUFFALO, 725 Main St.; ATLANTA, GA., 55 Auburn Ave.; LOS ANGELES, 1505 South Main St.; SAN FRANCISCO, 423-433 Golden Gate Ave.

AGENCIES:

Pittsburg Rubber Co., 913-915 Liberty Ave., Pittsburg; Gugler Electric Mfg. Co., Minneapolis; Geo. W. Perry & Co., St. Louis; Mercantile Lumber & Supply Co., Kansas City; F. P. Keenan Co., Portland (Ore.); Salt Lake Hardware Co., Salt Lake City; Compania Mexicana De Vehiculos, City of Mexico

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Locomobile

ESTABLISHES NEW RECORD FOR ENDURANCE AND RELIABILITY

The 24-hour relay race recently held at Milwaukee was won by a 1907 Locomobile, type "H" 35 H. P. The distance covered was 1146 miles, which performance establishes a **world's record** for this type of race for a mile track.

The Locomobile used in the race is owned by Dr. Schreiber, of Milwaukee, and it has been in almost constant use during the past season which makes its performance all the more creditable.

The average speed maintained during the 24 hours was 47¾ miles an hour,—a splendid performance for a car having a four-cylinder motor of 4½ inch bore and 5½ inch stroke. Fifty miles were covered during the last hour of the race. This gives an idea of the care with which our motors are constructed and the efficiency and reliability of our make-and-break ignition system and low tension magneto.

Dr. Schreiber's car was used all the time except when it was necessary to change tires. No mechanical troubles whatever were experienced except a slight leak in the radiator.

During the 24 hours' contest the Locomobile covered 100 miles in 2 hours, 1 minute and 9 seconds,—a splendid burst of speed for a rough track.

Send for Information Regarding Our 1908 Cars

The *Locomobile* Company of America

Bridgeport, Conn.

Member Association Licensed Automobile Manufacturers.

BRANCH OFFICES

NEW YORK, Broadway and 76th St. PHILADELPHIA, 245 N. Broad St. BOSTON, 400 Newbury St. CHICAGO, 1354 Michigan Ave.

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THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

GUARANTEED FOR ONE YEAR

Send for our Catalog. Address Dept. H

The St. Louis Car Company

Automobile Department, St. Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

EIGHTH NATIONAL

Automobile Show

November 2 to 9, 1907

Madison Square Garden

UNDER THE DIRECTION OF THE

Association of Licensed Automobile Manufacturers

The following Standard **GASOLINE** Cars, licensed under the Selden Patent will be exhibited:

Apperson	Knox	Pope-Tribune
Autocar	Locomobile	Royal Tourist
Buick	Lozier	Selden
Cadillac	Matheson	Stearns
Corbin	Northern	Stevens-Duryea
Columbia	Oldsmobile	Studebaker
Elmore	Packard	Thomas
Franklin	Peerless	Thomas Detroit
Haynes	Great Arrow	Waltham-Orient
Hewitt	Pope-Hartford	Walter
	Pope-Toledo.	Winton

ELECTRIC

Babcock	Rauch & Lang	Pope-Waverly
Studebaker	General Vehicle Co.	Columbia
Baker	Woods	

STEAM

White

Full Exhibit by The Motor and Accessory Manufacturers
Incorporated

FIRST COMPLETE EXHIBIT OF MOTORCYCLES

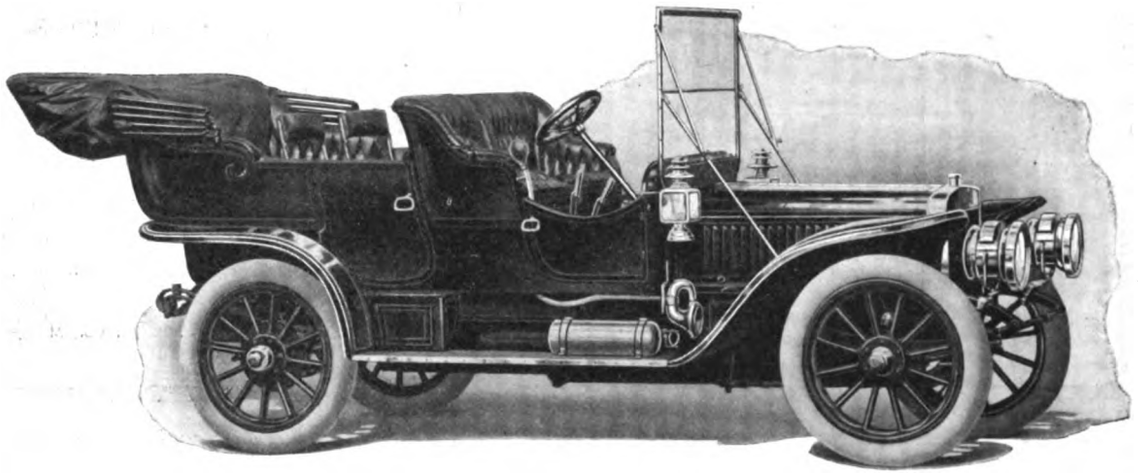
Unequalled Display of Commercial Vehicles

Admission 50c. Tuesday and Thursday, $1.00

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WINTON

SIX CYLINDERS EXCLUSIVELY



The Winton Company is the only company in the world making six-cylinder automobiles exclusively.

The reason the Winton Company has dared to follow this radical policy is that Mr. Winton has perfected a six-cylinder car that as completely outranks the best fours as the Twentieth Century Limited outranks ordinary passenger trains.

This new Winton Six-Teen-Six is precisely the car for the man who wants the best there is. Goes the route like coasting down hill. Widest range of speed, from flying to crawling, on high gear; threads its way through crowded traffic without shift of gears. Starts from the seat on compressed air. Once ride in the Six-Teen-Six and you'll love it.

Entire output limited to 500 cars, making it the Exclusive Car for 1908.

Purchase price includes five bow top, full set of gas and oil lamps, gas tank or generator, horn, tools and glass front.

Exhibit of the SIX-TEEN-SIX now on tour from coast to coast.

We shall exhibit at the Madison Square Garden Show, New York, Nov. 2-9.

$2500 IN GOLD FOR TEN GOOD CHAUFFEURS

First Prize $1,000
Second Prize $500 Third Prize $250
Fourth Prize $150 Six Others $100
A plan to benefit owners as well as drivers.
Ask us about it.

THE WINTON MOTOR CARRIAGE CO.
CLEVELAND, OHIO, U. S. A.
New York Boston Philadelphia Chicago San Francisco
Pittsburg Detroit Seattle London
Members A. L. A. M. Sales Agencies in All Important Cities

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The tire that satisfies

Is it easy to make a good tire?—One that is tough, and yet resilient; absolutely secure, but easily manipulated?

Money, brains, skill and years of experience are required to produce it.

As to the User

For the user but one quality is required—good judgment. Then he will specify

G & J Automobile Tires

They are at once the oldest and the best. If you are particular, insist on G & J Tires.

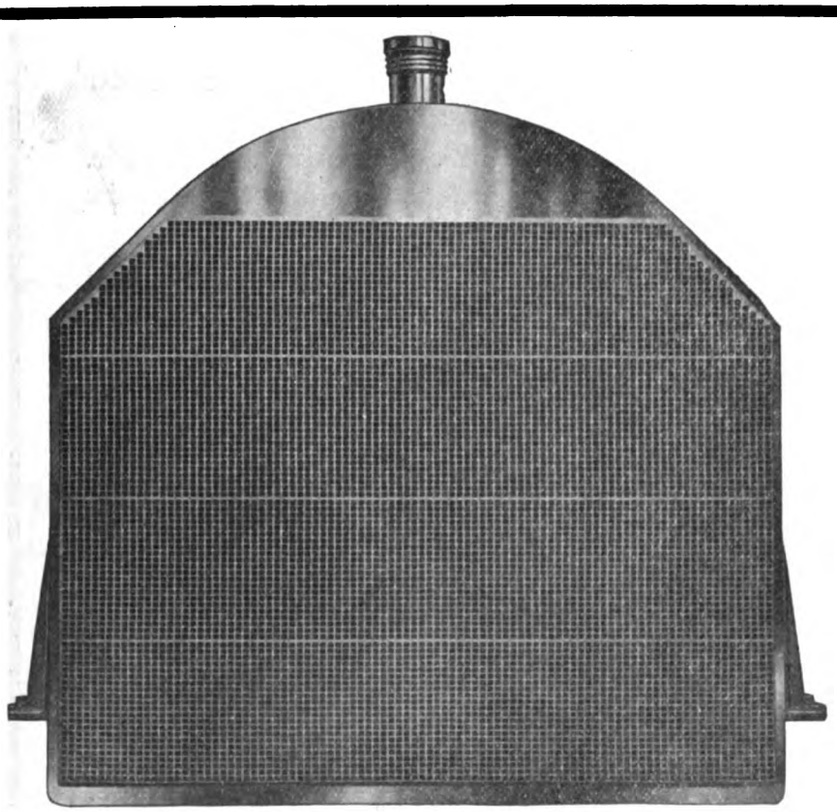
G & J Tires are provided with the oval raised tread or the Midgley anti-skid tread. Either the clincher or Dunlop type may be used interchangeably on the Midgley Universal Rim.

G & J Tire Co.

INDIANAPOLIS, IND.

BRANCHES { Boston—243 Columbus Ave. Detroit—247 Jefferson Ave. New York—10 W. Sixtieth St.
{ Cleveland—New No. 1837 Euclid Ave. Chicago—1434 Michigan Ave. San Francisco—423-433 Golden Gate Ave.

DISTRIBUTING AGENCIES—G & J Tire Agency, Denver, Colo., 1528 Court Place. G & J Tire Agency, Buffalo, N. Y., 912 Main St. G & J Tire Agency, Philadelphia, Pa., 711 N. Broad St. Western Rubber and Supply Co., Los Angeles, Cal., 1010 S. Main St. Omaha Rubber Shoe Co., Omaha, Neb., Eleventh and Farnum Sts. Northwest Auto Supply Co., Spokane, Wash., 1419-27 First Ave. Pittsburgh Rubber Co., Pittsburgh, Pa., 913-915 Liberty Ave. Enterprise Rubber Co., Boston, Mass., Mass., 110 Federal St. Alexander-Alyea Co., Atlanta, Ga., 35 N. Pryor St. Keats & Co., Portland, Ore., 64-66 Sixth St. Plant Bros., Minneapolis, Minn., 21 S. Second St. Central Rubber Co., Chicago, Ill., 84 Lake St. Syracuse Rubber Co., Syracuse, N. Y., 212-214 S. Clinton St. Rochester Rubber Co., R chester, N. Y., 55 Main St., East. Jerome P. Parker Co., Memphis, Tenn., 181-183 Madison St. Day Rubber Co., St. Louis, Mo.



¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

¶ **The Mayo Radiator** is **The Quality Radiator.**

¶ If you are a **Quality Maker** better write us at once.

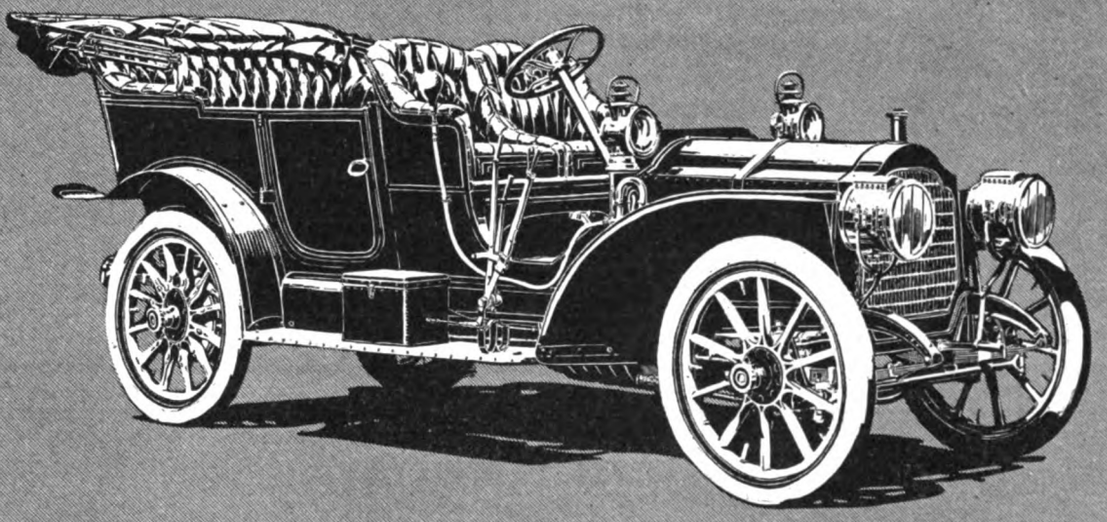
HONEYCOMB, CELLULAR OR FLAT TUBE TYPES.

MAYO RADIATOR COMPANY, New Haven, Conn.

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Packard

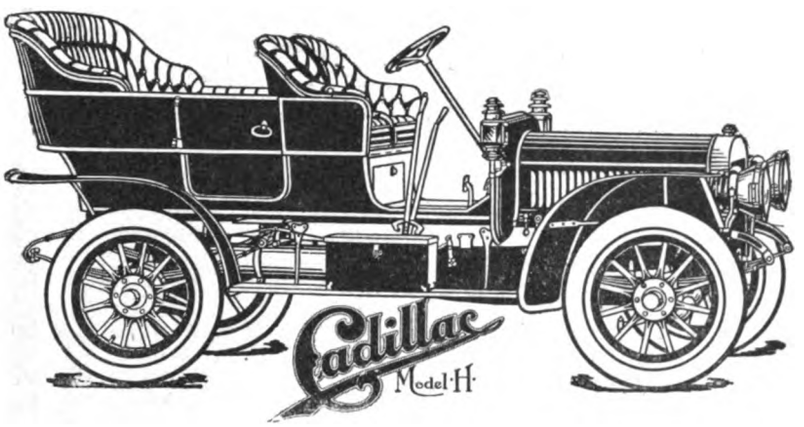
"THIRTY"
1908



"Ask the man who owns one"

PACKARD MOTOR CAR COMPANY
DETROIT, MICHIGAN

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We want you to

Get a Demonstration

in the

1908

Model H

CADILLAC

$2500

Ready for Delivery

This car is now entering upon its third season. It is not a new and untried experiment placed on the market for you to try out at your own expense.

The first Model "H" turned out proved itself worthy of every claim that was made for it, but the new 1908 model represents all the refinement and perfection of detail resulting from two years' experience and tests in the hands of critical users.

Its splenidd motor, made as the Cadillac Co. makes motors, coupled with correct design and accuracy of every individual piece gives the Model "H" a smoothness, noiselessness and perfect balance in action which is not excelled in any car, regardless of its price and regardless of the number of its cylinders.

SPECIFICATIONS.

MOTOR—30 H. P., four cylinders, cast individually, accurately machined and ground. TRANSMISSION—Cadillac Planetary, three speeds forward and reverse. The simplest and most easily operated transmission ever devised. DRIVE—Direct shaft to specially cut and hardened gears. BEARINGS—Genuine Hess-Bright on transmission shaft, driving shaft, rear axle and front wheels. WHEEL BASE—102 inches. TIRES, 34 x 4 inches. INTERCHANGEABILITY—All parts made accurately to limit gauges and thoroughly interchangeable.

CADILLAC DEALERS CAN MAKE PROMPT DELIVERIES. **Ask for special catalog of Model "H."**

CADILLAC MOTOR CAR COMPANY, Members Assn. Licensed Auto. Mfrs. **DETROIT, MICH.**

The Cadillac Cars will be exhibited in New York at Madison Square Garden only, Nov. 2-19, 1907.

EIGHTH ANNUAL

Automobile Show

OF THE

Automobile Club of America

Participated in by the

American Motor Car Manufacturers' Association and the Motor and Accessory Manufacturers

Grand Central Palace

Lexington Avenue and 43d Street

Thursday, October 24th to 31st, 1907

Greatest Exhibit of American Cars Ever Held

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Facsimile of the Largest Order for Vanadium Steel Ever Placed

FORD MOTOR CO.
DETROIT, MICH.

ORIGINAL

DATE Sept. 21, 1907.

ORDER FROM THE UNITED STEEL COMPANY,
CANTON, OHIO.

Our Reg. No. 6763

Ship Via Fast Freight
Mark each Shipment

F. O. B. Canton, Ohio.
Req. No. 6763

Terms 1% Cash 10 days or Net 30 days.
Dept. No. 52

N. No. Forging

Delivery Specified: 1/3 each type Nov.'07; 1/3 " " Jan.'08; 1/3 " " Mar.'08

Quantity	Description of Material Wanted	Price	Total
2,190,000 Lbs.	Vanadium Steel - "Type A" - For Crank Shafts, Steering Spindles, Front Axles, Frames, Drive Shafts, Transmission Shafts, Speed Gears Etc. Etc.	As per Contract	
600,000 Lbs.	Vanadium Steel - "Type E" - For Front and Rear Springs.	" "	"
220,000 Lbs.	Vanadium Steel - "Type D" - For Driving Pinions, Differential Gears, Cam Shafts Etc.	" "	"
	We specify herewith, in letter attached, the different sizes of steel required for forging purposes. Above specifications to apply on our contract tonnage for 1907 - 1908.		

Acknowledgement of this order must be made in writing by return mail.
No charges are allowed for boxing or crating unless previously arranged.
We reserve the right to cancel our order if the material is not shipped within the time specified.
There is no verbal understanding or agreement different than the conditions stated in this order.
We will not receipt for material unless it is tagged or marked with our Requisition Number, Department Number and Symbol Number.
Your invoices must also bear the above numbers and reach us by the time the goods arrive at our factory.
Send separate invoices for each order.

Approved W. C. Flanders.

Signed H. C. Linbark, Pur. Agent.

UNITED STEEL COMPANY

MAKERS OF

High Manganese, Vanadium Chrome Steel for Automobile Work

MILLS: CANTON, OHIO

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The Improved **VIM-SPARK PLUG**

Price $2.00 Postpaid

If it is not the best plug you ever used, return it to us and receive your money back.

ACTUALLY SHOOTS A BLAST OF FLAME INTO THE CYLINDER.

NO PACKING. Accurate taper ground joints positively prevent loss of compression.

NO CRACKED PORCELAINS, a spring at the end takes up the difference in expansion.



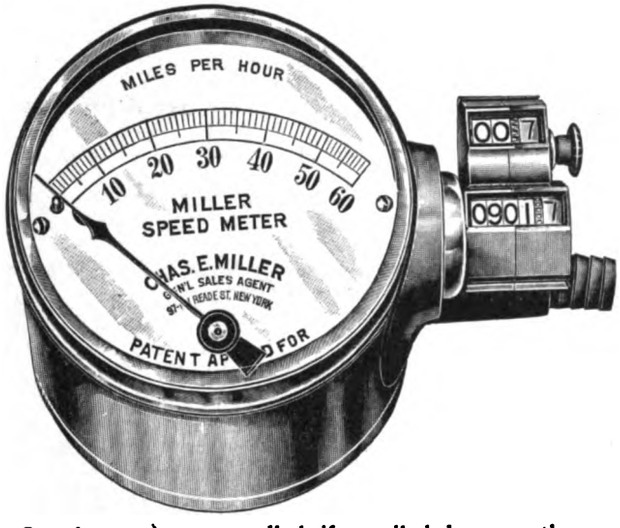
THE BEST—INSULATED PLUG ON THE MARKET. Has two porcelains and a mica tube.

Absolutely Soot Proof and Guaranteed to give 10 per cent. more power or your money refunded.

THE K-W IGNITION COMPANY, 38 Power Avenue, CLEVELAND, OHIO

Also makers of the K-W Magneto and the K-W Master Vibrator.

THE LARGEST AUTOMOBILE SUPPLY HOUSE IN AMERICA



The Miller Speedmeter

The Miller Speedmeter is the simplest and most compact, durable and accurate speedmeter on the market. It works on the principle of centrifugal force. The entire governor mechanism is constructed from tool steel. It is arranged for adjusting the tension of springs at all speeds, and with this special constructed governor and spring adjustment, the springs are made and adjusted to show all speeds with absolute accuracy.

Rate of Speed—We wish to call particular attention to the fact that the Miller Speedmeter will register correctly at a low rate of speed, and the hand does not bob around or fluctuate when running at slow speed.

Flexible Shaft—The flexible shaft used in this instrument is made from tool steel and each link hardened separately before assembling. The cost of this shaft is more than four times that of the wire shafts generally used.

Driving Gears—The Miller Speedmeter is fitted with crown gears with an universal attachment, which permits of the instruments being attached to any style of car on the market.

Distance Traveled—The Miller Speedmeter is fitted with an odometer, which registers the distance traveled in miles, and has total and trip dials.

Finish—The material, workmanship and finish of the Miller Speedmeter is not excelled, if equalled, by any other speed indicator on the market. Each instrument is carefully tested on a special constructed testing machine before leaving the factory, and

Is Guaranteed for One Year.—The price of the Miller Speedometer complete, including odometer, with dial registering 60 miles per hour, $50.00.

AGENTS WANTED EVERYWHERE—We give a large discount to manufacturers, jobbers, agents and dealers in automobile supplies. Manufactured by the MILLER SPEEDMETER CO. (Incorporated), 15 Herman Street, Worcester, Mass.

CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer

New York City, 924 Eighth Avenue.
Philadelphia, Pa., 318-320 N. Broad St.
Cleveland, Ohio, 406 Erie Street.

HOME OFFICE:
97-99-101 Reade St., NEW YORK CITY

Boston, Mass., 202-204 Columbus Ave.
Detroit, Mich., 227½-229 Jefferson Ave.
Buffalo, N. Y., 824 Main St.

Empire Tires
WEAR LONGEST

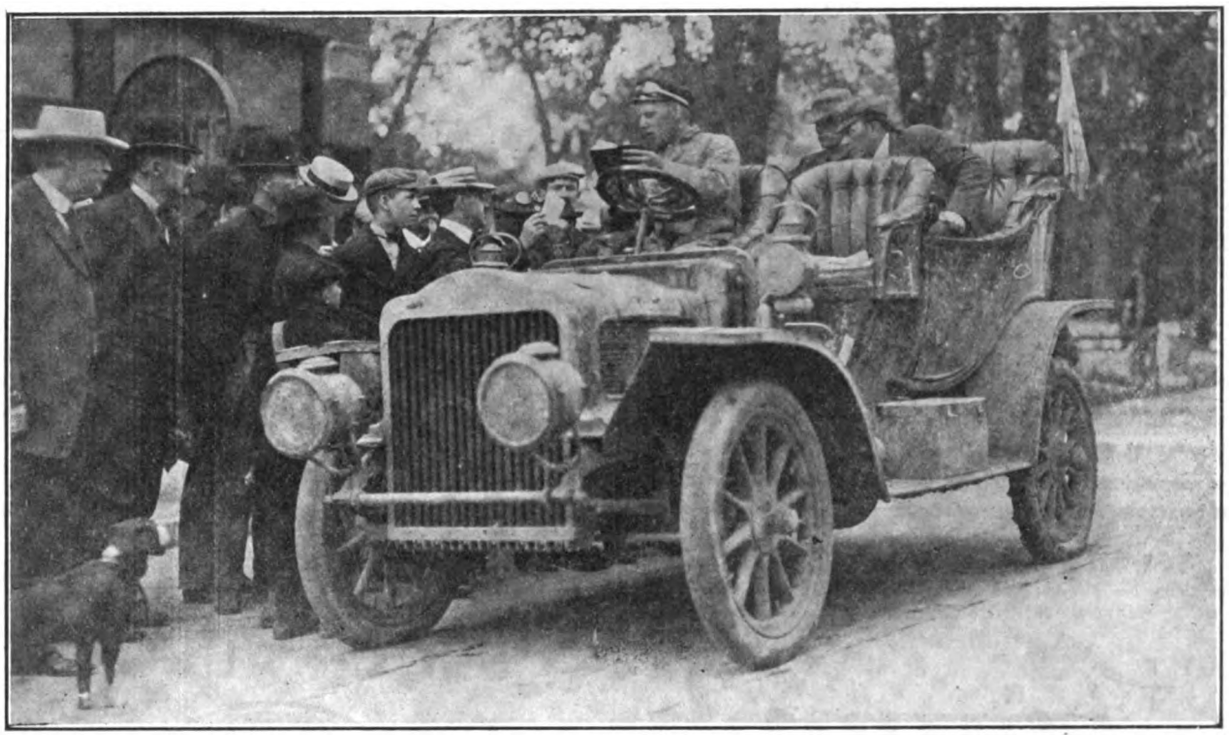
Empire Auto Tire Co., Trenton, N. J.

New York—Broadway & 73d St.; 148 Chambers St.
Chicago—20 LaSalle St.; 1615 Wabash Ave.
Boston—292 Devonshire St.
Buffalo—9 W. Huron St.
Philadelphia: Penn. Auto Supply Co.
Providence—Waite Auto Supply Co.
Seattle, Wash.—Fobes Auto Supply Co.

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THE INCOMPARABLE WHITE

THE CAR FOR SERVICE



A SEASON OF WHITE VICTORIES

White Bulletin No. 14, which has just been issued, gives a resumé of the victories of the White in the important contests of the year. The various chapters of the Bulletin bear the following headings:

The White in World-Wide Use
The President at the Wheel
Coutinued Government Favor
First Place in London Town Carriage Contest
Perfect Score in Harrisburg Endurance Run
Fastest Time in Wilkes-Barre Hill-Climb
Fastest Time in Cleveland Hill-Climb
Fastest Time in California Hill-Climb
Perfect Scores in Sealed Bonnet Contest
Officially Observed Non-Stop Run of 1871 Miles
Only Perfect Score in Quaker City Regularity Run
Fastest Time of the Season on the Track
Perfect Score in California Endurance Run
Officially Declared Most Efficient Car
Wins Third "Desirability Contest"
The Glidden Tour—A Clean Sweep for the White

Write for a copy of this interesting publication.

THE WHITE COMPANY

CLEVELAND, OHIO

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The Auto-Meter Again Sweeps the Board in the Glidden Tour



You noticed that the **Warner Auto-Meter** scored **another big victory** in this year's **Glidden Tour**, didn't you?

In this great **speed-and-endurance** race, where each contestant was required to make a **certain** point in **so many minutes**, it was necessary to know at all times just how fast they were going.

Now, when the great race **ended** at New York, it was found that

36 OF THE 48 CARS CARRIED AUTO-METERS

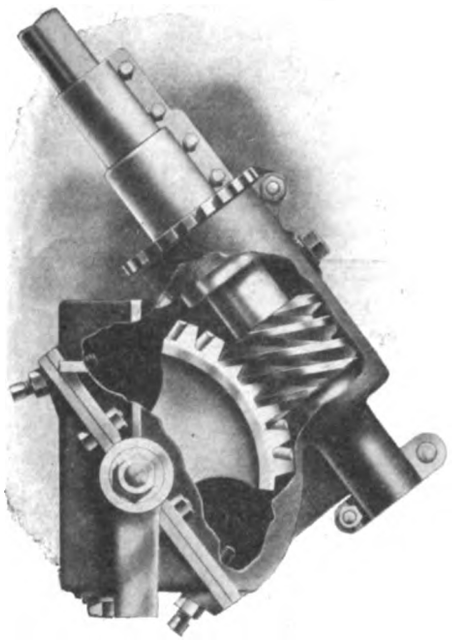
Think of it! At the finish there were exactly **3 times** as many Auto-meters as of all other speed-and-distance indicators **combined!** There isn't any room for argument, is there, when experienced motorists, like the Glidden Tourists, find that the **Warner Auto-Meter** is the only indicator they can depend on under all speeds and all road conditions.

You ought to have a Warner Auto-Meter on your car. Not only is it a great **convenience**, but it's really a **necessity** now-a-days. Inquire of any Automobile dealer about **Auto-Meters**, or write us, stating make and power of your car, and we'll tell you just what it will cost you to put an **Auto-Meter** on the dashboard. Address

THE WARNER INSTRUMENT CO.

752 Roosevelt Street, **BELOIT, WIS.**

Hindley Steering Gears

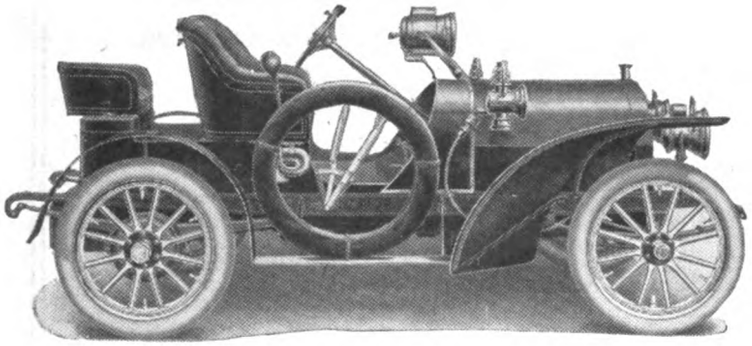


MORSE, WILLIAMS & CO.
(Dept. of Otis Elevator Co.)
PHILADELPHIA

WITHOUT A DOUBT
Other things being equal, you certainly prefer a car, which
Starts Without Cranking

The Triumph

SELF-STARTING CAR
is the outgrowth of years of experience, and embodies in its construction the three cardinal virtues
RELIABILITY—DURABILITY—COMFORT



It is the only car equipped with a Self-Starting Motor, and is so simple that any lady may drive it without the attendance of a chauffeur. There is nothing to watch, nothing to get out of order. You simply

"Push the lever and the motor starts"

THE TRIUMPH Car is built in two styles: **Model A—30 H. P., 4 Cylinder Runabout, - $2800.00** **Model C—30 H. P., 4-Cylinder Touring Car, $3000.00**

Triumph Motor Car Co., Dept. G, Chicago, Ill.

TRUFFAULT-HARTFORD SHOCK ABSORBER



FOR SAFETY AND PROTECTION

In Automobiling, **Truffault-Hartford Shock Absorber** are indispensable. They insure **comfortable riding,** even for the occupants of the tonneau under the most adverse road conditions. Besides **they prevent the breaking of springs, save time, tires** and **trouble.**

The superiority and individual qualities of the pioneer Shock Absorber are best demonstrated by the fact that the Truffault-Hartford has been **adopted exclusively as equipment** by such prominent cars as the **Pierce Great Arrow, Studebaker, Stevens-Duryea "Big Six," Stoddard-Dayton Six Cyl., Marmon, Continental, Lane, Conover, Sultan** and **Frontenac.**

Write to-day for our "Ruff Road" booklet, address Dept. I.

HARTFORD SUSPENSION COMPANY

66 Vestry Street, **NEW YORK.**

SEE US AT THE SHOWS.

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Apperson Quality

In a Medium-Priced Car

TO DEALERS

Investigate carefully and see if you can find another car; with fifteen years of experience in high-grade automobile construction back of it; a car made of the best materials the factories of the world produce; a car equipped with two independent systems of ignition—i. e. high tension magneto in connection with one set of spark plugs, located on one side of the cylinders, and another set of spark plugs on the opposite side of the cylinders operated by a storage battery with four unit coils; a car to carry four passengers in four individual seats; a car regularly equipped with folding top, five lamps and generator, horn and full set of tools; a car that will develop 40 H. P.; and all of the above, and more, for **$2750.**

WE ALSO ARE BUILDING

Model K—50-55 H. P. Touring Car, - $4200
With Top and Complete Equipment

Model J. R.—50-55 H. P.
"Jack Rabbit" Runabout, - - - - $5000
Speed 75 Miles Per Hour

Model S—50-55 H. P.
Six Cylinder Touring Car, - - - - $5000

This is the reliable dealers opportunity. If you can give the Apperson Line the representation it merits, write us now.

Apperson Bros. Automobile Company, Kokomo, Indiana, U. S. A. Members A. L. A. M.

SIDNEY B. BOWMAN AUTOMOBILE CO.,
225 W. 49th St., New York, N. Y.
FRED S. SMITH,
38 Columbus Ave., Boston, Mass.

JOSEPH F. GUNTHER CO.,
1240 Michigan Ave., Chicago, Ill.
PHILADELPHIA AUTOMOBILE CO.,
338 North Broad St., Philadelphia, Pa.

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Every Race

in which they were used (four out of five) at the Milwaukee Race Meet, September 20th and 21st, was won on

"Firestone"

Pneumatic Tires

without a single change of tire. The winner of the other event used up fourteen tires of three competing brands.

EVERY MAIL brings voluntary letters commending the superiority of FIRESTONE Pneumatic Tires in ordinary service.

The superior materials and methods used in making these tires are yielding superior tire service on the road.

The largest exclusive rubber tire makers in America

Firestone Tire & Rubber Company
AKRON, OHIO

BRANCHES

NEW YORK, 233 W. 58th St., cor Broadway. PHILADELPHIA. ST. LOUIS, 2226 Olive St. BOSTON, 9 Park Sq. CHICAGO, 1442 Michigan Ave. DETROIT, 240 to 242 Jefferson Ave. BUFFALO, cor. Ellicott & Tupper Sts. PITTSBURG, 5904 Penn Ave.





Matheson

THE MATHESON is standardized. The few changes for 1908 are unimportant refinements. The great string of Matheson victories during the past season, its new speed records, hill-climbing records, endurance records, its perfect scores galore in reliability contests, made, not only without need of repairs, but without even adjustments, all these have repeatedly proven to us that there is no room for improvement in the Matheson. We have sought in vain for records of performance that would direct the improvement of a single feature. Feature for feature through the world's output of high powered cars, there is nothing that can compare with the Matheson for performance over American roads.

This means that the motorist who purchases a Matheson to-day will have, years hence, a car which will be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. The Matheson is so strong, so swift, so powerful, so simple, so economical, so luxurious, so beautiful, so utterly without a peer, that no use of ink and paper can convey to you its greatness in entirety. Write for our new booklet, "I Drove My Matheson," by Matheson owners, some of whom have driven 5,000 mile trips at an upkeep cost of 5 cents—some for less.

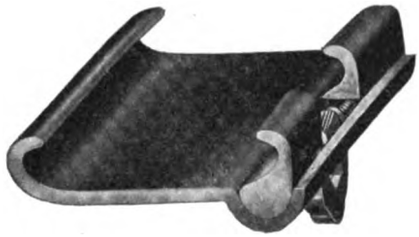
Touring Cars, 50 H. P., $5500
Limousines, Landaulets, 50 H. P., $6500

IMMEDIATE DELIVERIES

Licensed under Selden Patent.
Guaranteed One Year.

PALMER & SINGER MFG. COMPANY
1619-21-23 BROADWAY
Tel. 4876 Col.

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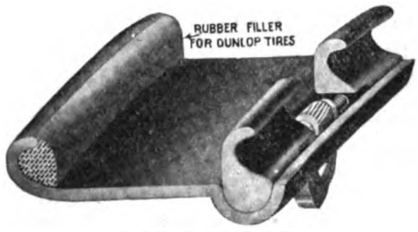


FOR CLINCHER

We have not been as loud or as sweeping in our tire claims as some have, but enough claims have been made for

MORGAN & WRIGHT TIRES

to put them out of the tire game had these claims not been lived up to—and more. The fact is, however, that literally thousands of motorists have been converted to the use of these tires during the present season—a statement that is based solely upon the actual increase in sales over last season. Is it at all likely that tires that were only fairly good could have taken such a hold on motorists?



FOR DUNLOP
(Note rubber filler in clincher on left.)

The Improved Midgley Universal Rim, illustrated herewith, accomodates every make of Clincher or Dunlop tires, as well as every type of mechanically fastened tires, except one. Standard measurements thruout, including inside diameter.

MORGAN & WRIGHT, Detroit

New York: 214 W. 47th St., 17 Warren St.
Chicago: 81 Michigan Ave.
Boston: Motor Mart.
Syracuse: 214 Clinton St.
Buffalo: 379-383 Washington St.
Rochester: 55 Main St. E.

Pittsburg: 913-915 Liberty Ave.
Philadelphia: 13th & Cherry Sts.
Cleveland: 1829 Euclid Ave.
Dayton: 405-411 East Third St.
Minneapolis: 708 Hennepin Ave.
Atlanta: 90 No. Pryor St.
St. Louis: 538 N. Vandeventer Ave.

Kansas City: 605-607 E. 15th St.
Denver: 1562 Broadway.
Los Angeles: 118-122 E. Tenth St.
San Francisco: 423-433 Golden Gate Ave.
Portland: 86 Sixth St.
Seattle; Ninth Ave. and Pike St.

Columbia

Mark XLVIII
24-28 H. P.
Touring Car



THE HILL-CLIMBING CAR

Half the pleasure of motoring is "taking the hills" with ease. **Mark XLVIII Columbia** is an exceptional hill climber, one instance of which is the winning of its class event in the **Algonquin Hill Climb** and making the best time of the day out of a field of **34**, many of which had twice the power of Mark XLVIII and were equipped especially for hill climbing. **This is a performance you cannot overlook. It means something.**

STANDARD TOURING CAR $3000 **LIMOUSINE $4200**

Electric Vehicle Company, Hartford, Conn.

Repositories at NEW YORK, BOSTON and CHICAGO
Members A. L. A. M.

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Rambler
Automobiles

For the year 1908 the entire facilities of the Rambler factory will be devoted to the production of two Models, 34 and 31.

Model 34, a five-passenger touring car with four-cylinder vertical motor, 32 horse power, has selective type transmission with shaft drive. The wheel base is 112 in., wheels 36 in., with 4-in. tires. Price, fully equipped, $2,250. The same chassis, however, with appropriate changes in detail, will be equipped with a roadster body with rumble seat, at the same price.

Model 31 is a five-passenger touring car with detachable tonneau, equipped with the Rambler unit power plant, comprising double opposed motor, multiple disc clutch and planetary transmission entirely enclosed. Price, fully equipped, $1,400. This model can be furnished with torpedo deck in lieu of the tonneau, at $1,300.

Both models have been brought to the highest possible degree of perfection in every detail that insures

Service, Economy and Comfort

A complete line of 1908 Ramblers will be shown at a private exhibit at the salesrooms of the Homan & Schulz Company, 38-40 West 62d Street, New York City, during both New York Automobile Shows.

You cannot afford to miss making a critical inspection of these 1908 models of

The Car of Steady Service.

Advance catalog now ready; write for a copy to-day.

Thomas B. Jeffery & Company

Main Office and Factory: Kenosha, Wis.

BRANCHES AND DISTRIBUTING AGENCIES: Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, October 3, 1907. No. 1

RECEIVER FOR "SOCIETY FACTORY"

Lovely Stationery and Gold Tipped Cigarettes Fail to Save B. L. M.—Admitted They Were "Hard Up."

"Society" and business have refused to profitably intermingle in the case of the B. L. M. Motor Car Co., Brooklyn, N. Y. As a result and following a written admission of inability to pay debts amounting to about $30,000, on Thursday last, 24th ult., Jesse Watson was appointed receiver for the concern.

While the failure of the B. L. M. institution should occasion no great surprise and really is of no great moment, few anticipated that a confession that the company was "hard up" would mark its end. Individually, Messrs. Breese, Lawrence and Moulton are supposed to be well provided with the world's goods, and unless the popular notion is a wrong one, the receivership seems to indicate an internal upheaval of some sort.

It required about a year for the company to build a car after it was first announced and if many others followed it, few knew where they went; a good proposition of the output appeared to be in use by the "society triplets" themselves, "Jimmy" Breese in particular. Breese is a very full grown man with roving eyes and a perfectly lovely beard, but like all real things in "society"—he is one of the "Long Island set"—the diminutive "Jimmy" clings to him with almost affectionate tenacity. It is said that the B. L. M. establishment was well stocked with "Reggies," "Percys" and other dear boys, while its business stationery was a perfect dream and such a model of correctness in social etiquette that it matched the appearance, if not the odor, of Mr. Breese's delicious gold-tipped cigarettes. The letter heads were dainty creations of note size which even though unscented, were so sweetly embossed in green and gold that no lady could be blamed for preserving them. But not all of this "good form" was sufficient to make the "society factory" a success and it failed exactly as many an Avenue A delicatessen shop has failed.

St. Louis Now in Trustee's Hands.

James H. Sholl, who had been serving as receiver, was last week elected trustee of the St. Louis Motor Car Co., Peoria, Ill., which now is fairly in the bankruptcy court. The claims of Jesse French, Sr. and his wife, which were in the shape of notes amounting to $60,000, were suspended, as was also the claim of the Illinois National Bank in the sum of $15,000, and these claimants were not allowed to vote on the selection of a trustee. The objectors, who carried their point, claimed that preference had been shown to the bank, and that the capital stock of the French interests was not paid in full, inasmuch as the property which was turned over as payment for the stock was overvalued.

Weber Proves Right to Turntables.

In the United States Circuit Court, Detrict of Colorado, Herman Weber, of Colorado Springs, owner of the patents covering the Weber portable turntable trucks, has obtained a permanent injunction against the Pike's Peak Mfg. Co. and Stean B. Mansfield, for infringement thereof. Weber waived his right to an accounting as to profits and damages and was awarded nominal damages of $1, the defendant being required to pay the costs of the suit also. The patents involved are No. 772,014, Oct. 11, 1904, reissue 12,430, Jan. 2, 1906, and 863,122, Aug. 13, 1907.

Lende Moves to Minneapolis.

The Lende Automobile Co., which has capital stock of $250,000, and which has built a few four-cylinder air-cooled cars at Granite Falls, Minn., is removing to Minneapolis. It has leased for five years what is known as the Windstacker factory building, a three-story brick structure, 80 by 150 feet, and expects considerably to increase its output.

FAMILY NAME NOT A TRADE-MARK

Patent Commissioner so Decides in Regard to the Word "Rainier"—His Decision of General Interest.

Application made by the Rainier Co., for the registration of the name "Rainier" as a trade mark for motor cars has been refused by the Patent Office. The first refusal came from the Examiner of Trade-marks, from whose decision the Rainier Co. appealed to the Patent Commissioner. The latter, however, has sustained the action of his subordinate and as the use of similar family or geographical names now is quite general in the automobile industry, the Commissioner's decision in the Rainier case is of more than restricted interest.

"Registration was refused on the ground that the word 'Rainier' is geographical and on the further ground that it is the mere name of an individual not written in a particular or distinctive manner," says the decision.

"That the word 'Rainier' is the name of an individual is not controverted by the applicant; but it is contended, first, that it is not merely the name of an individual, and, second, that if it is merely the name of an individual it is written, printed, or impressed in a peculiar and distinctive manner and therefore registrable.

"This first contention is based on the ground that besides being the name of an individual Rainier is the name of a mountain in Washington. This use of the word is, however, not its principal use, and its primary significance is as the name of an individual, as is shown by the fact that the word constitutes the distinguishing feature of applicant's name, which is apparently derived from the name of an individual. It is held, therefore, that within the meaning of the Trade-mark Act this name is merely that of an individual.

"The word is written in large script letters with a flourish extending from the let

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ter 'R' beneath certain letters of the word. This is not such a distinctive display of the name as required by the Trade-mark act. A similar question came up in ex parte United States Brewing Company, (125 O. G., 352,) and it was held by the Commissioner that a family name printed in script on a diagonal line, the letters being shaded so as to appear in perspective and with a paraph under the word, was not such a distinctive display as to justify registration.

"The decision of the Examiner of Trademarks is affirmed."

Warner Opens New Branches.

The Warner Instrument Co. are "out for business" in no uncertain fashion. One of their moves in that direction will be the establishment of a branch in each of the more populous states. Last week one was opened in Cleveland, Ohio, with O. T. Foster as manager, who was transfered from the Detroit house. The latter vacancy has been filled by the appointment of George C. Weidner as manager. Weidner formerly traveled the west for the Warner company and, of course, is well versed in the virtues of their autometer.

Thomas Adds Town Cars and "Sixes.'

For the 1908 season, the E. R. Thomas Motor Co. have let it be known that they mean to develop the latent demand for town or suburban cars, which appears a move very much in that direction. For the purpose a light four-cylinder chassis of moderate power—20 horsepower—will be used on which will be mounted not merely runabout and limousine bodies, but brougham, landaulet and cabriolet structures. It now is also public property that a six-cylinder car will be included in the Thomas line for 1908; it will be of 70 horsepower.

Holmes Schedule Shows Small Assets.

Schedules filed by the Holmes Motor Vehicle Co., Boston, Mass., which failed several weeks since, disclose liabilities amounting to $38,261.36, and assets valued at only $308.74. Most of the debts are of a "family nature," however, the Charles Holmes Machine Co., Boston, being the largest unsecured creditor; its claim totals $28,116.31. The only secured creditor is the International Trust Co., of Boston, $4,657.42.

Cairo's Chance for a Factory.

If the citizens of Cairo, Ill., will provide a factory site and bonus of $5,000, R. W. Hunt and L. E. Schweitzer, of Chicago, have offered to locate a $40,000 automobile factory in that city. The promoters in this case vary the usual order by agreeing not to ask for the money until the plant is in operation.

Brush Resigns from Packard.

W. A. Brush, who succeeded W. B. Hurlburt as manager of the Packard Motor Car Co.'s New York branch, has resigned that office.

In the Retail World.

W. S. Maltby of Plainfield, N. J., has taken the Essex county for the Corbin car, and will open sales rooms in Newark.

Raymond S. Joo has closed his garage at 79 Orange street, Newark, N. J. He has become identified with the Roseville Motor Car Co., of the same city.

William Koch will erect a two-story garage at 223-225 North Sixteenth street, Philadelphia. It will be two stories high, 30x120 feet and will cost $7,500.

Rodney Curtis has contracted for the erection of a new garage at West Raven garage at 1501 Pennsylvania avenue, Denver, Col. The cost will approximate $3,000.

Smith & Euwer have contracted for the erection of a new garage at West Rayen avenue, Youngstown, Ohio. It will consist of two stories in brick and fireproofed.

A. Hosterman, South Bend, has moved his garage and repair shop to 205 North Main street to secure more elbow room. He formerly was located at 309 North Main street.

Lima, O., is to have a modernly constructed garage. Mack & Brooks have purchased for $12,000 the Ashton lot on West Market street and will erect a large garage, plans for which will be drawn at once.

Walter Flynn has disposed of his Wick avenue garage at Youngstown, Ohio, to Kleese & Wick. Flynn will go to Norwalk, Va., where he will open a garage in partnership with M. H. Logue and William Murray.

The Harnishfeger-Dugger Automobile Repair Shop and Garage, conducted by Alexander Harnishfeger and Oscar L. Dugger, at Evansville, Ind., has filed articles of dissolution. The firm will discontinue business.

The Central Park Auto Storage Co., which maintained an immense garage at 110th street and Central Park West, New York, has filed schedules in bankruptcy showing debts of $15,572; the assets amount to but $2,732.

Smith Bros., Los Angeles, have been opportioned a slice of Rainier territory—all of Southern California. Ezra E. Kirk, western sales manager of the Rainier Co. did the apportioning during his visit to Los Angeles last week.

The garage at Rochester owned by James M. Hallock and operated by Frank Adams, was destroyed by fire which started from a short circuit, on September 27th. Five cars were destroyed and the total damage amounts to $15,000.

The R. Kent Company is erecting a brick garage on Lauderdale street, Selma, Ohio. The building will measure 35x100 feet and will fill a needed want, as while there are more than a score of cars in Selma there has been no garage facilities.

L. C. Oliver has acquired the large building at the corner of Ashley and Ocean streets, Jacksonville, Fla., and has converted it into a garage. The floor space is 17,000 square feet, which is larger than all the other garages in the city combined.

The Buck Automobile and Implement Co. has purchased the Goodwin Automobile Co., Davenport, Iowa, and will take possession November 1st. The sales room, garage and repair shop will be enlarged and a full stock of tires and sundries be carried.

Fred J. Titus, who has been connected with Hary S. Houpt's New York agency for Thomas cars will forsake the allurements of Manhattan for an exilement in Newark, N. J., having been appointed manager of Houpt's Newark branch. Titus will begin his duties on October 15th.

Fire in the Bedford garage at 1291 Bedford avenue, Brooklyn, last Thursday, 26th inst., destroyed three cars and damaged the building. Five cars were run into the street before the flames could damage them. A careless bystander and a lighted match are supposed to have been the origin.

Harry Murch, for some time connected with Alvan T. Fuller in the Motor Mart, Boston, will shortly engage in business for himself at Worcester. The new firm will be Murch & Hidden, the latter being a Fitchburg man. They will have the agency in Worcester county for the Cadillac.

The J. W. Bowman Company, Boston, opened its new sales rooms at 911 Boylesston street last week. The building has been remodeled and made two stories instead of three, giving better ventilated quarters. In addition, the company will lease 10,000 square feet on the ground floor of the Copley square garage.

C. R. Newby, formerly with the National Motor Vehicle Co., and later with the Indiana Automobile Co., of Indianapolis, has been appointed general manager of the reorganized Boyd Automobile Co., of that city, which has secured the state agency for the Stevens-Duryea and several other cars. The company will remodel its building and add to its floor space and the stock of accessories.

The Blue Ribbon Garage on Fairfield avenue, Bridgeport, Conn., which is said to be the largest building of its kind between New York City and Boston, was formally opened last week. The building, which is three stories and basement high, is of solid concrete and steel, even the roof, which has a testing station on it. Improved lockers, dressing and waiting rooms, and all the other features of an up to date garage are numbered among its utilities.

Schulte Pressing Brooks Motor.

Peter W. Schulte, who had secured two judgments against the Brooks Motor Co., Detroit, has carried out his threat and applied for a receiver for the concern. The action is of small moment, however, as the Brooks company, such as it was, "went broke" in building its first car.

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DAVIS' VIEWS OF THE SITUATION

Thinks Many Made a Gamble of the Business— Striking Evidence of Locomobile Preparedness.

With thirty 1908 cars already shipped, sixty to go forward this month, and 250 to be shipped by January 1st (and with a million and a half dollars' worth of material in the factory), the business of the Locomobile Co. of America is a refutation of the cry of hard times and depression in the automobile industry.

These facts and figures concerning Locomobile preparedness were gleaned in the course of a talk with Samuel T. Davis, Jr., president of the company, who was in New York this week to attend the meeting of the executive committee of the N. A. A. M., and who is sincerely enthusiastic over the 1908 product.

"For the first time," said Mr. Davis, "we have what we have been aiming at for several years. We always felt that we had a good car, and its reliability and lasting qualities were never questioned. At the same time, it was thought in some quarters that we were a little shy on speed. The 1908 Locomobile proved at Milwaukee its speed possibilities, and we feel to-day that we can go out and trim any stock car in this country. Though we rate our larger car at 40 horsepower, it develops from 57 to 60 horsepower in the tests and is a most satisfactory unit all the way through.

"The record of our ignition system the past year is especially gratifying, as out of six hundred cars in service not one magneto has been replaced; and the only wire in the whole car is about two feet long to permit of a cut-out button at the wheel. We would not for the world change or ignition system under any circumstances; its absolute reliability is one of the comforting features to Locomobile users.

"We have had to cut down the output of "our smaller car" in order to add to the number of big cars to be shipped, as on this smaller model we barely turn our money over; it is being continued only at the earnest insistance of our agents. This little Loco, by the way, has, we believe, more friends than any other car built. It is Locomobile quality all the way through; it is just as good as its bigger brother, and so perfectly balanced that an owner is assured of from six to eight thousand miles on one set of tires, while in many cases ten and twelve thousand miles have been obtained. We could next year sell many more than we should be able to build, but the orders on the larger car compel us to limit the number."

General business conditions, in Mr. Davis's judgment, are normal and not more than should be expected. The automobile business, in his opinion seems to have been the field for a lot of gamblers who, not understanding or appreciating the fact that it was a manufacturing proposition, threw their money into it in every direction with the expectation of its quickly returning in ten-fold lots. There is and will be a market for good cars of various classes, but the concerns which build them will have to be equipped for the work in hand and have a thorough knowledge of manufacturing conditions and of the requirements of the public they aim to serve. Lacking these factors the possibilities of success would seem to be remote indeed.

The Week's Incorporations.

Clyde, Ohio—Roberts Motor Co., The, under Ohio laws, with $100,000 capital. Corporators—B. L. Roberts et als.

Denver, Col.—Chicago Automobile Co., under Colorado laws, with $25,000 capital—Corporators—W. H. Ivion, S. M. Spafford and Mabel Clay, all of Denver.

Kansas City, Mo.—Fletcher Cowherd, Jr., Automobile Company of Kansas City, under Missouri laws, with $10,000 capital; fully paid. Corporators—Fletcher Cowherd, Jr., F. R. Sanborr and Fletcher Cowherd.

Houston, Texas—Empire State Motor Co., under Texas laws, with $10,000 capital; to deal in automobiles, etc. Corporators—B. F. Bonner, John N. Kirby, S. A. McNeeley, W. M. Baugh, T. J. Anderson, and Ray Weiss.

New York City, N. Y.—Weldless Chain Co., under New York laws, with $15,000 capital. Corporators—Walter B. Lasher and Clark P. Lane, Jr., Bridgeport, Conn.; Christopher Reckleff, 26 Liberty street, New York City.

Jamestown, N. Y.—Jamestown Garage Co., The, under New York laws, with $25,000 capital. Corporators—Howard Dow, 72 Allen street; Albert S. Price, 6 Ellicott building; and Henri M. Hall, Journal building, all of Jamestown.

Smith Succeeds Budlong in N. A. A. M.

At the regular meeting of the executive committee of the National Association of Automobile Manufacturers in New York yesterday, F. L. Smith, of the Olds Motor Works, was elected a member of the executive committee, to fill the vacancy caused by the resignation of M. J. Budlong, former representative of the Electric Vehicle Co. Most of the session was devoted to consideration matters pertaining to highway improvement, an address on the subject being delivered by Charles Thaddeus Terry, the association's attorney.

Melon Cut for Reo Employees.

The Reo Motor Car Co., Lansing, Mich., has given each of their employees of more than one year's standing, a most agreeable surprise. It took the form of a check equal to 5 per cent. of his annual salary, accompanied by word that a similar distribution will be made each year hereafter.

TO PRODUCE AUTO-METERS ABROAD

Warner Makes Arrangement with Foreign Company—Instruments to be Reproduced at Birmingham.

Realizing the importance and magnitude of the foreign business, the Warner Intsrument Co. for a long time have cast longing eyes toward the European field. Their output has been taxed to the utmost, however, in order to supply the American trade and for that reason they have never tried to interest the foreign market.

Opportunity, however, presented itself and offered a solution that will serve the same ends, the Warner people having just contracted with the Electric & Ordnance Accessories Co., Ltd., of Birmingham, England, for the production of their instruments on a royalty basis. This company is owned and controlled by Vickers Sons & Maxim, one of the largest manufacturing concerns in England making electrical instruments, which in the matter of machinery and workmen is unusually well qualified to reproduce the Warner. They will immediately start the manufacture of the Warner Auto-Meter and expect to make it as popular in Europe as it is in the United States. The Warner Instrument Co. naturally feel they are to be congratulated, particularly as the Electric & Ordnance Accessories Co. had already arranged and were ready to market a centrifugal type instrument, but after seeing the construction of the magnetic indicator, they abandoned their previous ideas and plans in order to take up the manufacture of the Auto-Meter, which is in the nature of action that speaks louder than words.

Attachments on Berkshire Property.

Attachments representing claims aggregating less than $3,000, have been placed on the property of the Berkshire Motor Car Co., Pittsfield, Mass., which had announced its permanent shutdown, unless the residents of that place came forward with fresh capital. Officers of the company say that all claims will be paid in full.

McCutcheon Makes a Change.

Charles G. McCutcheon, formerly sales manager of the Premier Motor Co. and latterly head of the McCutcheon Gear Co., Indianapolis, has been elected vice-president of the American Distributing Co., Cleveland, and will have to do with the sale of that company's ware. He probably will make his headquarters in the east.

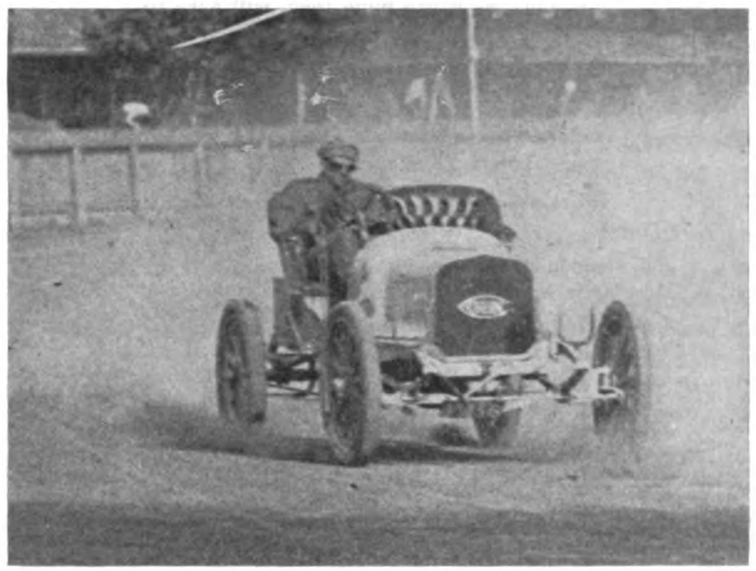
Headed for Pacific Coast.

The Pacific Coast still is full of attraction for automobile sales departments. James Couzens, of the Ford Motor Co., and George H. Strout, of Apperson Bros Automobile Co., were among others who headed in that direction last week.

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"Working in flawless fashion throughout the distance, the (Corbin) car finished the race in 1 hour, 2 minutes, 14⅘ seconds, which is a new 50-mile record for the Readville track."—*Boston Post*, September 15, 1907.

THE FULL-JEWELED CORBIN MOTOR CARS



THE FULL-JEWELED CORBIN MOTOR CARS

THE CORBIN MOTOR VEHICLE COPORATION, New Britain, Connecticut

Member Association Licensed Automobile Manufacturers.

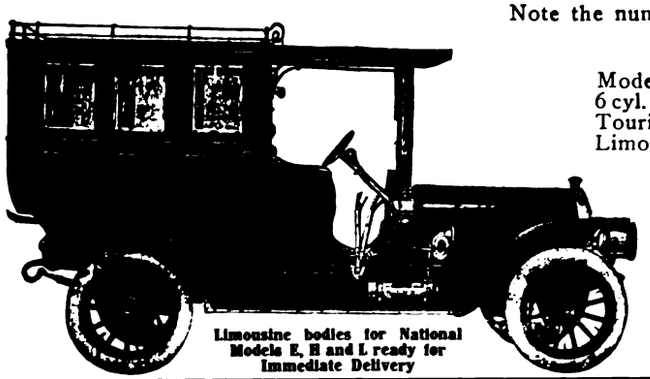
A National PROPHECY FULFILLED

In the Fall of 1905, when we brought out the First Stock Six Cylinder Car Made in America

we stated in our advertising

THAT IT WAS "An Innovation in Touring Cars"
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NATIONAL MOTOR VEHICLE CO.
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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞ Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, OCTOBER 3, 1907

The Motor World's Show Numbers will bear dates October 24th and 31st and November 7th.

Preventing Theft and Accident.

In every city there is a large daily record of accident and theft due to cars being left unattended, without the protection of some device to make them inoperative except under the control of the rightful driver. The simple ignition switch with a take-off arm or a removable plug does not present any serious difficulties to any one who is sufficiently familiar with cars to attempt to drive one. Extra plugs that will fit into such switches are common in the pockets of loungers around garages and in the automobile districts, and only a little ingenuity is needed to close the contact on the switch with the removable arm. The gasolene feed pipe lock is something of an improvement, but perhaps the best of all is some method of locking the change gear lever in the neutral position. With such a device the motor could be left running with safety, and no sidewalk meddler with a penchant for tugging at the levers could start the car off.

The use of such protecting devices is surprisingly limited. Men who will surround $500 in cash with all the security offered by a combination safe, will leave a $3,000 car to the mercy of theft or smash-up because the fitting of a protective lock is "too much bother." The individual owner may not be aware of the danger from both sources that really threatens him, but the police records all over the country show an astounding number of cases right along where cars are taken, never to be heard of again, or are reduced to worthless wrecks by the incorrigible investigator who "monkeys" with the car at the curb. Except for the man who is indifferent as to whether he loses his car or not, the fitting of an effective lock is matter deserving of careful attention and early action.

Opportunity to Free "Slaves."

If the efforts of the hidebound community of Nantucket, Mass., to prohibit the use of motor cars on their precious island were not sufficient to do so, surely the idiocy of the Massachusetts law which is so strikingly exemplified by the Ashfield incident quoted in another column, should be enough to assure that if the American Automobile Association is sincere in its desire to prove itself really useful, the opportunity will not be permitted to escape. Action in a case of this sort will go far to answer questions, to silence criticism and to attract support. Indeed, the Ashfield case is so flagrant and the point involved so vital, that it merits not only the attention of the A. A. A., but of the National Association of Automobile Manufacturers and the other trade organizations.

Under the provisions of the Massachusetts law, the State Highway Commission is empowered to grant permission to petitioning communities to close certain supposed public roads or thoroughfares to automobiles. In Ashfield, as the experience of Mr. Arthur Kingsbury demonstrates, the permission has been invoked to such purpose that all roads leading to a certain part of the town are "posted," that is, automobiles are warned off. Mr. Kingsbury, on business intent, failed to heed the warning and as a result was placed under arrest. The effect of this provision of the law, as the Motor World remarked on previous occasions, is actually to prohibit a resident on a "posted" road or street from owning a motor car or, at any rate, from driving one into or out of his own domicile, which certainly is an astounding state of affairs.

Ashfield may be a rather small place, but the point involved—the freedom of the public highways—is a large one and one of universal concern. It concerns more than one State and individual and if the A. A. A. and the N. A. A. M. stand for such freedom they should not leave the battle to one determined individual or State association. The precedent involved is beyond price and will reach far.

We know, of course, that the N. A. A. M. has a test case pending in New Jersey and that the A. A. A. is seeking Federal aid, but in each instance it is not the open road that is in issue, but rather inter-State recognition of licenses. A favorable result in either case will scarcely open the "posted" roads in Massachusetts or in any other commonwealth.

Not later than last week on the occasion of the Springfield convention—Springfield being in Massachusetts, by the way—President Hotchkiss of the A. A. A., made a florid address in which he declared that automobilists always had been "slaves" but that they meant to be slaves no longer. The occasion is pertinent to remind him that actions speak louder than words. When is the "slavery" to cease? When does he mean to begin lifting the yoke?

Making the Garage Profitable.

Profitable garage management is undeniably one of the most difficult problems in the automobile trade. Many garages are maintained as mere adjuncts and aids to the sale of cars, without other hope than that in themselves they will come out even on the expenses. The reasons for such a policy are that the garage keeps its proprietor in touch with owners who may later buy new cars and the garage facilities give a dealer the opportunity to supplement his selling arguments with the assurance that when the purchaser gets his car he will be taken care of by mechanics skilled in handling that particular make. But for the man who looks to straight garaging and repairing for profit and income such competition is a menace that further complicates his many difficulties.

In a few cases a garage pure and simple

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is paying, but by far the greater number of the flourishing garages have found that the most profitable results are to be obtained by combining the sale of accessories and supplies with the business. Successfully to sell these requires a measure of merchandising ability, something of which not every garage proprietor is possessed, but when properly done it yields substantial returns. The garage proprietor who lets his customers go in and out day after day without ever discovering that this one ought to have a new pair of lamps, a speed indicator, or a set of shock obsorbers, or that that one should use an accumulator instead of dry cells, or should buy his wife a pretty dust coat, or needs a tire jacket and a set of non-skids, had best go slow on ordering any stock. In fact under any circumstances the garage owner should keep his stock very light, the best plan being to talk the matter over with the customer first, persuading him of his need and offering to get the desired article for him at the proper price. It is easy enough to get the goods promptly from the jobber or the manufacturer without stocking heavily. But the main point is to let it be known that the owner can get anything he may want at his garage, meeting any complaints about not having things in stock by pointing out that there are advantages in getting fresh goods that are not shelf worn.

In a sense many garage owners have overlooked their advantages in this direction and have not seen all the possibilities which the nature of their business has afforded.

Transmission Relief Necessary.

Considering the great amount of wear and tear which is received by the components of the transmission gearing on all cars, and accepting the theory that it is largely if not entirely due to the racking strain brought about by the oscillation between the chassis and the running gear, it seems strange that designers should habitually ignore this most important factor in designing their cars. That its effect is taken into account, intentionally or otherwise, in designing the parts for strength, is almost a foregone conclusion, considering the long life of most transmissions, but the absence of any yielding medium in the line of transmission except as the slipping of the clutch may act in that way for the protection of the motor, leads to the conclusion that the need of such provision is being altogether ignored, or on the other hand, that its existence is not perfectly understood.

Whether the transmission be of the cardan shaft or simple chain type, the result of every plunge of the chassis upon the springs is that a certain amount of motion is imparted to the transmission gearing and is communicated through it until it is either taken up in lost motion between the parts, or expended at the clutch or motor. When the car is plunging wildly, this amounts to a succession of very small accelerations, first positive and then negative, and though most noticeable in chain transmissions, where it causes a distinct flapping of the chains, exists in the same way, though in varying degrees, in all types. The magnitude of such variations in transmission motion depends largely upon the method of design. In some cars it is very slight, while in others, as is evidenced by the frequent breakages of gears or chains, it is inordinately great. In every case is constitutes a source of frequent and intermittent stress of considerable magnitude, against which no direct provision is made.

In one or two foreign cars, a spring driving device is provided, for the double purpose of absorbing these and the shocks due to sudden starting, as well as the effect of roughness in the road which cause sudden and irregular variations in traction resistance totally apart from the plunging effect under discussion. These in what appear to be the best forms, take shape as a pair of discs placed in the driving shaft adjacent to one another and with corresponding lugs opposed and connected by helical springs, the driving action tending to compress the springs almost, but not quite, entirely. Thus a slight amount of yieldability is always present in either direction. A similar effect is secured by the use of a stout helical spring placed directly in the line of transmission. Other applications of the same general principle are conceivable, as for instance, the use of a secondary clutch of the disc type placed behind the gearset, and designed solely for the purpose of furnishing a certain amount of slip under sudden and extraordinary pressure, but otherwise remaining firm. Certain types of hydraulic clutch, so many of which have been designed, also are well suited to this purpose. Though as applied in the position of the ordinary master clutch, their use would be of little service in this respect.

COMING EVENTS

October 12, Rochester, N. Y.—Rochester Automobile Club's annual hill climb at Penfield Dugway.

October 24-31, New York City—Automobile Club of America's eighth annual show in Grand Central Palace.

November 2-9, New York City—Association Licensed Automobile Manufacturers' eighth annual show in Madison Square Garden.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliesum and First Regiment Armory.

In any case, the application of such a device need not in the least complicate the present types of transmission in so far as design or operation are concerned, and certainly would be of advantage in the several ways indicated. This being the case, it is much to be wondered at that no such arrangements are used, especially since the evil which they chiefly aim to palliate appears to be inherent and irradicable.

The Motor World's views regarding laws entailing the payment of fees for registration and license and providing that the right to use the common highways may be revoked are fairly well known. Despite the increase of such enactments, nothing short of a decision from the Supreme Court of the United States will serve to dislodge our belief that the right to the free use of private property on public roads is an inherent, universal and irrevocable constitutional right.

But while such laws exist it is a pleasure to commend their enforcement without fear or favor, such as has prevailed under the administration of J. B. R. Smith, New Jersey's Commissioner of Motor Vehicles. The manner in which he has dared to defy the "pull" of a big political "boss" and to invite the thunder of a powerful daily newspaper, by revoking their licenses, to say nothing of the effective fashion in which he has suppressed the city-to-city record fiend, suggests that he is the right man in the right place, with small regard for his political future. It is rare that such equal and exact application of the law is witnessed.

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RACED THROUGH MUD AND WATER

Cedrino Finished First in 24-Hour Contest at Morris Park—Rainstorm and Fatality Mars Long Grind.

The second of the 24-hour races held at Morris Park motordrome took place on Friday and Saturday, the 27th and 28th ult. It was won by Emanuel Cedrino and E. Parker in a 35 horsepower Fiat with a score of 984 miles. The mileage made by the winning car in the 24-hour race on the same track three weeks previous was 1,079 miles, but at that time the contestants did not have six solid hours of rain against them at the finish as was the case in the later race. Cedrino drove a 1906 Fiat, and not a 1908 model, as has been stated in some of the reports.

At the conclusion of the "twice around the clock," Cedrino, covered with rain and slush, drew up before the judges' stand and asked when he was to get the prize money, as he heard of the difficulties that some winning drivers had had at other 24-hour races in getting the promised plum. The winning car's share was $700, and a 35 horsepower Studebaker, driven by E. Holm and J. A. Ditman, with 878 miles, captured the $200 for second place, while a 40 horsepower Itala, polited by Charles Zumbach and Maurice Carriere and which had made 873 miles, took third money, $100.

The line-up was as follows:

No. 2, Lozier, Michener and Hutchinson; No. 3, Lozier, Linkrom and Smelser; No. 4, De Dietrich, Mack and McMann; No. 5, Matheson, Ryall and Adams; No. 6, Matheson, Lescault and Buck; No. 7, Frayer-Miller, Knepper and Webster; No. 8, Packard, Owen and Demos; No. 9, Welch, Truwin and Greenwood; No. 10, Simplex, Robertson and Poole; No. 11, Allen-Kingston, Campbell and Blakly; No. 12, Fiat, Cedrino and Parker; No. 14, Studebaker, Holm and Ditmar; No. 15, Darracq, Wallace and Nuneman; No. 16, Darracq, Griffith and McCulla; No. 17, Motobloc, Gilliurd and Block; No. 18, Rolls-Royce, Burns and Fuller; No. 19, Stearns, Vaughan and Warren; No. 20, Stearns, Schlipp and Helsas; No. 21, Itala, Zumbach and Carriere. The 35 horsepower Renault, which won the previous 24-hour race and which had been assigned No. 1, was withdrawn at the last moment. The reason given out was that Maurice Bernin, who with La Croix, was to have driven it, was suffering from a sprained wrist.

Of the 19 starters, only 7 finished, their respective scores being as follows:

Fiat (Cedrino), 984 miles; Studebaker (Ditmar), 878; Itala (Zumbach), 873; Frayer-Miller (Knepper), 756; Allen-Kingston (Campbell), 754; Simplex (Robertson), 696; Stearns No. 20 (Warren), 594.

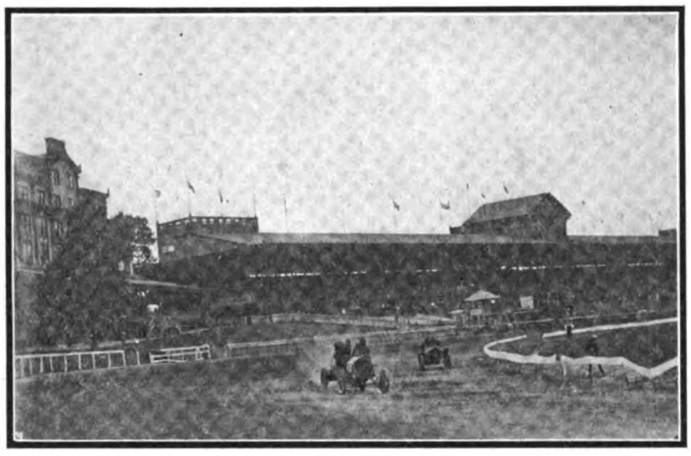
Owing to the great number of starters it was necessary to send them off in divisions, so the machines were lined up in three rows of five each and one row of four, and were sent at five second intervals. Things promised well at the beginning, the large list of entrants indicating hot competition. The track was well lighted, the illumination being about four times as powerful as in any previous event of the kind, and the track had been put into excellent condition. The driving was at a very high tension for the first hour and Mack, in a De Dietrich set the pace at 52 miles in the 60 minutes. At the end of the second hour the Simplex, driven by Al Poole, was in the lead with 101 miles, the going being very much faster in the early part of the race than was the case in the previous grind.

Near the close of the third hour Arthur Warren's Stearns car limped off the track, the first break in the ranks, with more to follow. The Welch car, driven by Truwin and Greenwood, had an exciting whirl at the first quarter turn when a tire collapsed. The machine was going at a fast pace closely followed by several others. As it slewed when the tire went bad, there was every appearance of impending collision from the pursuing cars, but the driver let in his clutch again and drove through the inner rail, which was made of bunting, clearing the path for the on-coming cars just in time to avert accident. This daring move appealed to the crowd, and the driver was loudly cheered. After a quick repair, the car was put back in the race again.

The two Lozier cars had the lead by the end of the third hour, the first one, driven by Smelser and Linkrom, keeping in front until the eighth hour. Then Cedrino in the Fiat began to press hard for first place and finally captured it. After that he kept ahead and let the others follow as they might. In the thirteenth hour, which translated means 9 o'clock Saturday morning, the Lozier, driven by Smelser, went through the outer fence at one of the turns, due, it is said, to a tire going bad. Smelser was knocked unconscious by striking an iron water pipe that was fastened to the fencing, and died at the hospital an hour later. His skull and chest were fractured. Some spectators were more or less injured, but Hall, the mechanic on the car, when it went through the fence, was only slightly bruised. The other Lozier was shortly after withdrawn because of the Smelser tragedy.

Early in the afternoon another accident occurred. The Packard, driven by Embleton, had a tire come loose and went through the white bunting into the infield, where it rolled over twice. To the crowd in the grandstands it looked as though both driver and mechanician were killed. The latter soon crawled from under the wreck unhurt, however, and Embleton was found to be all right except for a sprained back.

In the afternoon the race was interrupted for two hours to give place to a short card of events for the entertainment of the spectators. These over, it was resumed again, with Cedrino in the Fiat far in the lead. No further accidents marred the proceedings but a heavy and steady rain set in, which made the track a bowl of oily slush. While the speed was greatly decreased by this condition, even greater skill was nec-



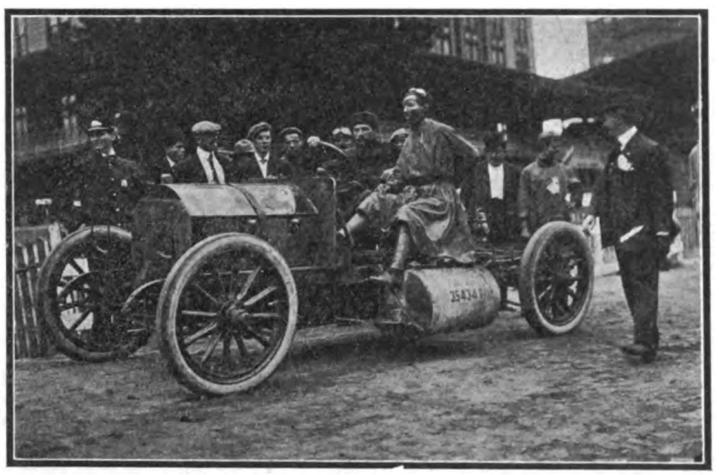
DAY VIEW OF THE TRACK



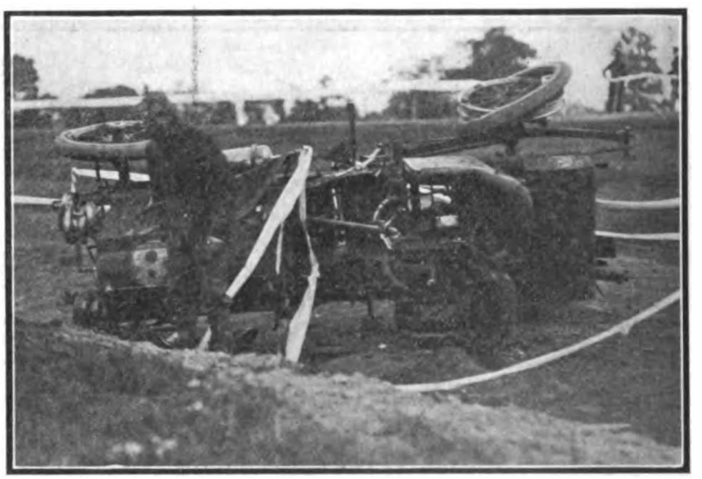
NIGHT VIEW OF THE TRACK

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essary in the driving, as the turns were treacherous and even the straightaways were not free of uncertainty and dangerous possibilities. The dismal drizzle of the rain cast a damper on the spirits of the spectators in spite of the entertainment that was provided during the evening by a moving picture machine which gave views of the Vanderbilt cup race. A searchlight was cast on each car as it came by the grandstand, a new feature and one which has much to commend it, as heretofore it has proved very difficult always to identify the cars speeding by the stand in the dark hours of the night. Water having gathered in large pools on some parts of the track, there was a glorious splash when a car would strike one of the miniature lakes, but beyond this there was little that was interesting or picturesque in the last hours of the race. It was much like the mud plugging of the famous New York-Pittsburg endurance contest or the more recent Albany run. By the time Cedrino had finished his 24 hours, the grandstand seats which had contained about 7,000 spectators were nearly empty and it was a depressed procession that wended its way back to town after everything was over.



CEDRINO, WINNER OF THE 24-HOUR RACE



WRECK OF THE PACKARD

Postponement of Chicago Meet.

Jupiter Pluvius interfered with the plans of the Chicago Automobile Club to promote a fall race meet at the Harlem track last Saturday, and in consequence of a dangerous course the meet was postponed until this Saturday, 5th inst. A representative field of entries has been secured for the ten events, which embrace the following: Ten mile open for motorcycles, three mile open for stock cars listing under $1,500, five miles for runabouts under $3,000, one mile exhibition by Webb Jay, three miles for motorcycles, five miles for Chicago A. C. members, unlimited pursuit for stock cars, ten miles free-for-all, one hour invitation and five miles handicap for motorcycles. A 24-hour race had been originally planned, but was subsequently abandoned for lack of entries.

BERLIN'S LAUGHABLE GYMKHANA

Dog Gives Automobile Close Race—Horse Beaten in Stopping Contest—Other Amusing Events.

No automobile contests held in Connecticut in a long time caused more enthusiasm or furnished more wholesome and enjoyable sport than did the gymkhana events which featured the closing day of the Berlin Agricultural Society's annual fair, near New Britain, on Saturday last, 28th ult. The fun was of a most variegated character, and the stunts done were of the most mirth provoking description. At least one of the events, aside from its design to furnish amusement, was possessed of some value as to the controlability of the automobile.

The gymkhana started in the morning with a street parade in which many decorated cars were exhibited, and in the afternoon, 6,000 persons laughed at the stunts the cars and drivers were put through at the track. Corbin cars featured prominently and captured nearly every ribbon offered. The new water-cooled model driven by A. J. Maisonville covered itself with blue ribbons by winning three first prizes, one second and one third, besides tieing in another third. Maisonville won the cup to the driver scoring the most points.

Probably one of the most interesting races was the one in which a dog ran against an automobile for an eighth of a mile. Wesley Barbour, Corbin, was given a flying start over Professor Welch's traveling canine, and the race resulted in a neck and neck fight until within a few yards of the tape, when the automobile forged ahead and won out by a half second.

New Britain and Hartford people were given an instructive object lesson when a special event was run to determine whether a horse drawn vehicle or an automobile could be stopped quickest. William Doyle had a balky horse that he thought could capture the blue in a jerk, but A. J. Maisonville brought up his Corbin to a dead stop before the horse could get his fore feet planted in the ground.

A three-legged race provoked considerable merriment. Each car carried two passengers besides the driver, who started thirty feet behind the car, ran to it and scrambled aboard. After being driven a quarter of a mile they had to get out of the car, run once around it, remount and ride to the tape. Emile Brazil had his passengers better trained than those of Barbour, and won in a hop. The summaries of the events follow:

Dog versus automobile, one-eighth mile—Won by Wesley Barber, Corbin, over Welch's dog. Times, 0:30 and 0:30½. Automobile had flying start.

Dead man race, dummies picked up 100 yards from finish—Won by N. Wesley, Corbin; second, A. J. Maisonville, Corbin; third, James Corbett, Corbin.

Twenty-five miles an hour judgment race—Won by N. Wesley, Corbin; second, Fred Haines; third, tie between A. J. Maisonville, Corbin, and Dr. J. E. Stoddard, Corbin.

Half-mile hill climb on high gear—Won by A. J. Maisonville, Corbin; second, James Corbin, Corbin.

Dressing for the ball contest—Won by A. J. Maisonville, Corbin; second, Wesley Barbour, Corbin; third, A. C. Smith, Corbin.

Three-legged race—Won by Emile Brazil, Panhard; second, Wesley Barbour, Corbin; third, A. J. Maisonville, Corbin.

Half-mile slow race on high gear—Won by N. B. A. Carrier, Ford; second, James Corbet, Corbin; third, J. Carpenter, Ford.

Barrier contest, removing barrier 100 yards from the tape—Won by Wesley Barbour, Corbin; second, A. C. Smith, Corbin.

Ginger ale drinking contest—Won by A. J. Maisonville, Corbin; second, Wesley Barbour, Corbin; third, J. Carpenter, Ford.

Stopping contest between horse and automobile—Won by A. J. Maisonville, Corbin; second, William Doyle, 1 horsepower Equine.

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CURTAIN RAISERS AT MORRIS PARK

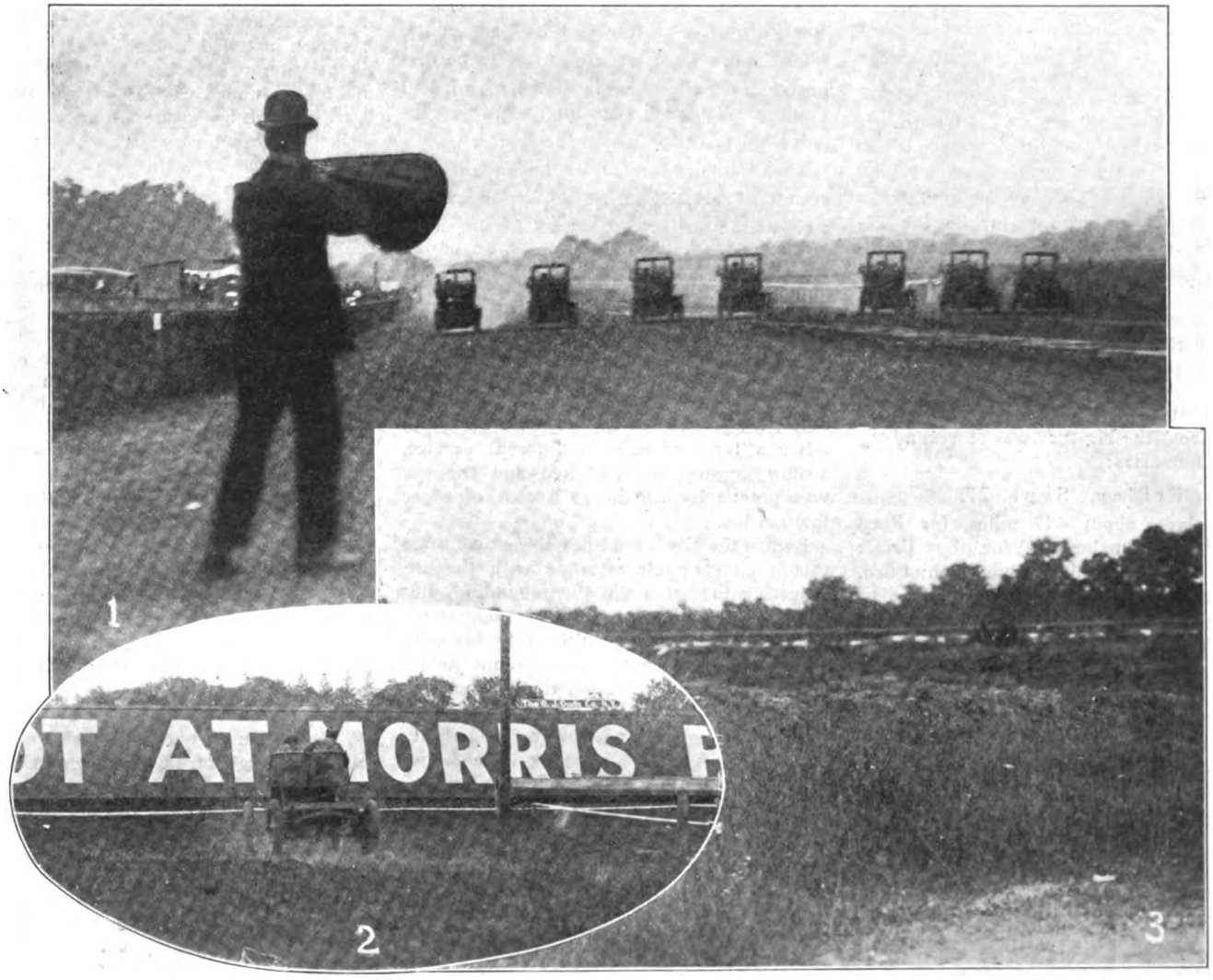
Events That Preceded the "Twice Around the Clock"—"Road Race" and Taxi-Cab Parade.

Efforts to introduce novelty into the Morris Park automobile meets have not been without some degree of success and interest. The automobile polo contest and the flexibility trial incident to the previous 24-hour race proved to be good features, but in connection with the last meet the "road race" over the Allen course, so called, in which the cars raced part of the time on the track and then cut over the turf on a marked course, to bump a few bumps and plow a few sand heaps, was scarcely what imagination had pictured.

This was one of the star numbers of Friday afternoon's short event program. It had been heralded as an example of how a road race could be held at Morris Park and the advance notices had described the terrors of the "hairpin turn" and the rigors of its hills and sand. The "hairpin" was rather abrupt and called for skilful driving, but it would have taken a gradometer with a micrometer attachment to discover the hills and the sand stretches would have lasted a canary cage for a day or so. The contestants made eight laps, a distance of about ten miles. W. H. Owen, by clever driving, won easily by a mile or more, but as a spectacular or exciting display it was sadly lacking and as a test for the cars it had a little bit more than the same quality as running a race over the undulating lawn of Central Park's playground, although at that both of Owen's rivals had to stop and tinker with their cars.

By far the prettiest event of the afternoon was the parade of taximeter cabs. New and lustrous, with varnish shining over the handsome maroon finish, seven of the vehicles which are promised to deliver New York from the piratical jehu, lined up abreast for what was programed as a slow race on the high gear. But the drivers did not seem to be aware of any such contest and went around in an even line across the track in "right dress" order. The trig smartness of their appearance brought a round of applause from the grandstand, although it is possible that some of the applauders were actuated by mistaken enthusiasm in thinking that the even line was caused by a close finish.

The other numbers on the afternoon's card included a three-lap race for Ford runabouts; three laps for single cylinder motorcycles; record trials for one mile; a motorcycle one-mile record trial and an eighteen-lap "Motordrome Championship" for cars of 60 horsepower or less. In the mile trials George Robertson drove in E. Russell Thomas's 120 horsepower Hotchkiss and did the distance in 52 seconds, not quite equaling Walter Christie's record of 51⅕, which latter was done on a mile track, while Morris Park is 1.39 miles. When the motorcycles tried for the same distance, Stanley T. Kellogg, on a 5-7 Indian, made it in 59 seconds. W. H. Wray, of Brooklyn, who with a Peugeot-Simplex has been showing great speed, was also billed to appear, but as he is under suspension by the



1. THE LINE UP OF THE TAXI-CABS. 2. ROUNDING THE "HAIRPIN" ON THE ALLEN COURSE
3. "SAND HILLS" ON THE ALLEN COURSE—PUZZLE: FIND THE HILLS

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Federation of American Motorcyclists, was not permitted to ride.

The eighteen laps of the "Motordrome Championship," a distance of 25 miles, gave the six entrants a lively race. George Mack in a 60 horsepower De Dietrich was apparently getting away with it up to the fourteenth lap when a tire went wrong and Guy Vaughan, in a 60 Stearns, took the lead to the finish. George Fentie in a Packard took second, and Charles Schilipp landed third. The latter, after finishing, did not slacken rapidly enough in coming to the turn beyond the finish line, and went over the outer bank, crashing into one of the big lighting outfits which awaited its evening's work at the track side. There was a lively scattering of men and boys to get out of the way, and the driver succeeded in bringing the car to stop before any one was hurt.

On Saturday afternoon, while the 24-hour race was stopped for two hours, a 20-lap "road race" over the Allen course, was held. Like the similar event the day before, this was won by W. H. Owen, in an American Mors. L. C. Nuneman, in the 80 horsepower Darracq that won the 1906 Vanderbilt cup race, made a mile record trial, but the best that he could do with the track torn up from the big race was 58 seconds.

The summaries:

Friday, Sept. 27.

Three laps, about 4.17 miles, for Ford four-cylinder runabouts—Won by Frank Dunnell; second, Walter Livingston; third, E. Rogers' Stearns. Time, 8:07.

Eight-lap road race over Allen course, about 10 miles—Won by W. H. Owen, American Mors; second, Ned Crane, English-Daimler; third, Charles Truwin, an uncrowned king's car. Time, 22:13.

Three-lap motorcycle race, for machines of less than 30½ cubic inches—Won by Walter Goerke, Indian; second, John L. Seidell, Indian; third, Frank P. Baker, Indian. Time, 5:35.

Mile trials—George Robertson, 120 horsepower Hotchkiss. Time, 52 seconds. William Wallace, 80 horsepower Darracq. Time, 0:56⅕.

Motorcycle mile trials—Stanley T. Kellogg, 5-7 Indian. Time, 59 seconds. A. G. Chapple, 6 N. S. U. Time, 1:24.

Twenty-five mile Motordrome championship, eighteen laps—Won by Guy Vaughan, Stearns; second, George Fentie, Packard; third, Charles Schilipp, Stearns. Time, 27:54⅕.

Saturday, Sept. 28.

Twenty-lap road race over Allen course—Won by Wallie Owen, 40 horsepower American Mors; Ned Crane, 45 horsepower English Daimler, second; Arthur Rowley, 35 horsepower De Dietrich, third. Time, 54:31⅕.

Mile record trial—L. C. Nuneman, 80 horsepower Darracq, 56 seconds.

NEW YORK SELLS ITS "CASTOFFS"

Palatial Cars Acquired for Garbagemen's Use, Antiques Go Cheap—"Joker" in New Purchase.

Having recently acquired a big seven passenger touring car in order that the commissioner and his deputies may better week disposed of its "castoffs" at public dumps and other garbage heaps, the New York Street Cleaning Department last week disposed of its "cast offs" at public sale. There were three of them to be disposed of at the sale, these being an 8-10 Panhard about five years old, a big Searchmont and a little Orient buckboard.

The Panhard and the buckboard had seen hard service and showed the effects. As a result the one brought but $220, the other a beggerly $32.50. Except its tires, the Searchmont appeared to be in better shape than the other two, but the best the auctioneers could get for it was $125. This car had quite a history. Originally it had been used by the American minister in Cuba, who sold it to the city of New York. After a term of sadly indifferent service, a new engine was installed and the car was practically rebuilt at a cost of more than $1,100.

Before the city would pay this price, there was a considerable wrangle with the engineering firm that did the rebuilding. But the firm would not deliver the goods until its bill was paid and ultimately the city capitulated. When the Searchmont finally was received, it was found to have been so thoroughly rebuilt that it would not run at all; and, according to one apparently trustworthy story, it has never run a foot since that day. It has remained an elephant on the city's hands. No tears were shed when the auctioneer finally disposed of it last week.

Of course, the new seven-passenger touring car which replaces the "castoffs" was not selected with the faintest idea of "joy riding" for friends and families in mind New York's street cleaning commissioner and his deputies are so thoroughly honorable and conscientious that they would not permit anything of the sort! Capacity for seven passengers was necessary, because—well, because it makes it so much easier to inspect public dumps. Any man in a blind ayslum can see that without blinking. Everything connected with the purchase of the cars was similarly high-minded. For instance, the specifications inviting bids were drawn so that only one manufacturer could meet the call and yet despite this consideration it is said that some of the city officials are inclined to believe that the hands that passed out the plum were stung. It is alleged that they had been promised a $5,000 car for $4,000. They got it all right; but at about the same time the same car was advertised at retail for $4,000, which also will be the list price of the 1908 model.

Telharmonic Music for the Show.

One of the interesting novelties in the Madison Square Garden Show November 2-9, will be the introduction of telharmonic music to take the place of the brass band which has for some decades furnished the harmony for all the different kinds of shows which have been held in the big building.

It will be the first time that telharmonic, or electric music, as it is sometimes called, has been installed in such a vast arena. The Association of Licensed Automobile Manufacturers, under whose auspices the show is to be held, has made a contract with the Telharmonic company to furnish music for the entire week of the show. Special cables have been led from Broadway through Twenty-sixth street and into the Garden. These cables are strung in the ducts of the New York Telephone Company and are practically the same as the telephone cable, the music being conveyed from the Telharmonic Co.'s musical "power plant" on Thirty-ninth street, in which the music is made and from where it is sent, just as electric light or electric current is sent, to any part of the city.

The advantage of this modern system of music can be appreciated when it is understood that the music will radiate, so to speak, from probably one hundred dufferent trumpets scattered over the immense arena. It is likely that these trumpets will be concealed in draperies or behind pedestals so it will be impossible to tell where the music comes from or to even see the little trumpets from which the more or less pleasing sound emanames.

Arrangement has been made to so distribute the trumpets that at each space there will be enough music to entertain the visitors and at the same time in no part of the Garden will there be any disturbance or noise, as is caused by the playing of a big brass band perched high up in the galleries.

Chicago Employees Form Fraternity.

Daytime denizens of Chicago's "row" with the exception of proprietors and dealers turned out in force one night last week for the purpose of forming a fraternal organization solely for automobile employees, into which neither the sound of employers' footsteps nor the tumult of labor agitations and discussions may enter. The Automobile Employees Fraternal Association chose its officers as follows: President, J. Purcell; vice-president, W. R. Willett; secretary, L. A. Goodsell; treasurer, C. L. Herron; directors, J. A. Holsman, W. R. Willet, T. M. Hart, J. H. Philpott, and H. M. Simpson.

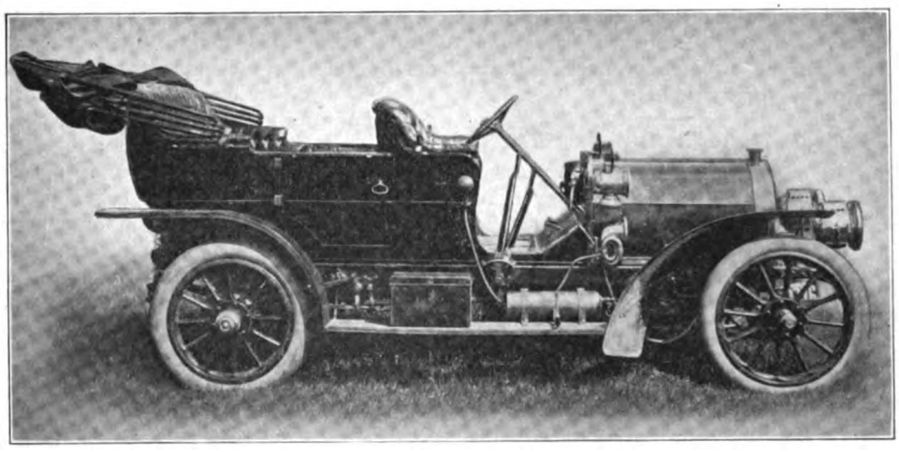
"The A B C of Electricity." Price 50c. The Motor World Co., 154 Nassau St., New York City.

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PENNSYLVANIA MODEL FOR 1908

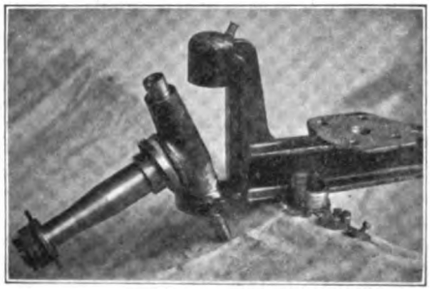
New and Original Design Embracing Points of Particular Merit—Its Qualities of Serviceability and Endurance.

Of entirely new and original design, embodying several points of particular merit, the Type C, Pennsylvania car, which the Pennsylvania Auto-Motor Co., Bryn Mawr, Pa., has prepared as its 1908 output, is a car of parts, and one which promises well in the way of serviceability and endurance, these qualities having been given thorough and very evident attention in its delineation. It is a 40-45 horsepower model, of conventional mold, the outward characteristics of the earlier types of last year being retained, in a general way. The wheel base is 114 inches, clearance, 10 inches, weight, equipped with the standard aluminum body, 2,800 pounds, and price, $2,800.



1908 50-HORSEPOWER PENNSYLVANIA

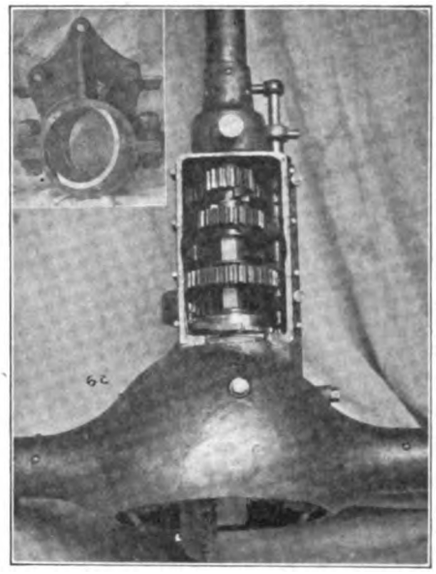
How thoroughly the matter of endurance has been looked after in designing the motor, for instance, is evidenced in the bearing lengths, which for the crank shaft, aggregate no less than 14½ inches, the shaft itself being hollowed out for purposes of continuous lubrication of all the bearings. The cylinders are cast in pairs, their inner dimensions being, respectively 4¾ and 5¼ inches, both sets of valves being placed flat in the heads, and worked by overhead walking beams. An unusual allowance of jacket area has been provided over the heads, the jackets extending upward to include the full length of the valve cages, which is considerable.



STEERING KNUCKLE PARTIALLY ASSEMBLED

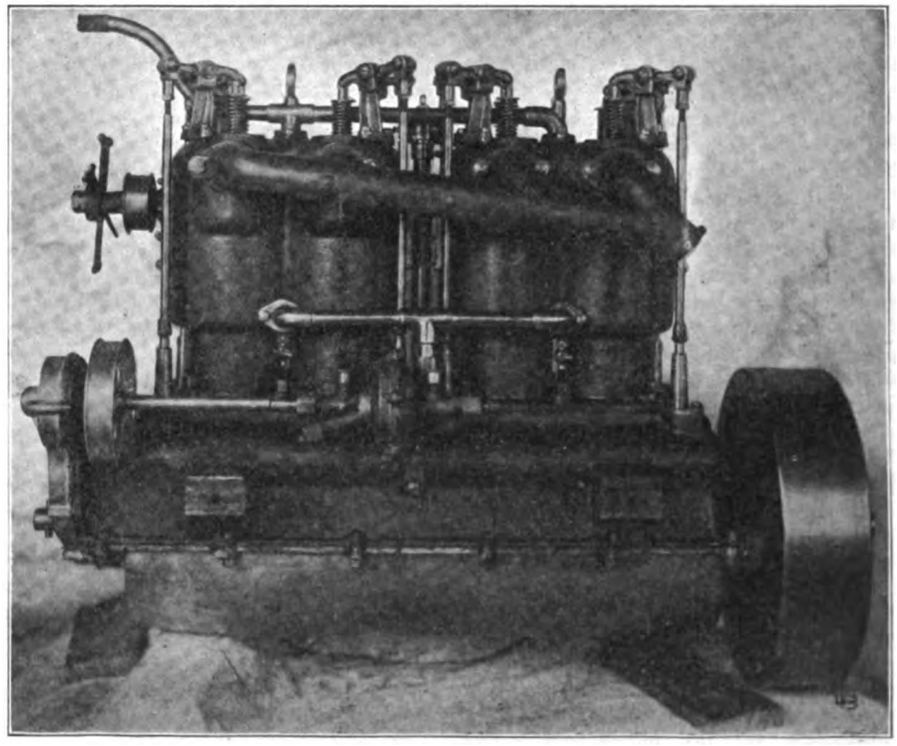
The cages referred to, are of independent unit construction, and with their springs and valves, may be removed in their entirety, a single locking ring serving to retain them in position. The springs are housed within caps, only the ends of the stems being exposed. The cam shafts work within the crank pit enclosure, the commutator shaft, which is vertical, taking its drive from the center of the inlet cam shaft. The circulating pump, which also, is gear driven, has a capacity of 8 gallons per minute, with a crank shaft speed of 600 revolutions per minute.

The master clutch of the transmission is of the self-contained, internal cone type, is protected from thrust stresses by ball bearings, and possesses the unusual feature of being lubricated from the motor through the hollow crank shaft. Directly behind it is a double universal joint having unusually large bearing surfaces, connection with the driving shaft being made through a broached flange on the universal coupling, which takes hold of the squared end of the shaft.



REAR AXLE HOUSING AND GEAR CASE —TORSION ROD SUPPORT (PANEL).

The change gear group, which is of the selectively actuated pattern, is mounted on the rear axle, within the same housing as the differential, and comprises, together with the axle itself and its anchorage, one



MOTOR, SHOWING EXHAUST SIDE

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of the neatest arrangements to be found. The gears are of 1-inch face, and of the popular 6-8 pitch stub tooth contour, and run on ball bearings of the annular type. The highest speed ratio is obtained by direct connection of the driving line members, and a roller bearing mounting for the forward end of the secondary driving shaft as it is supported in the pocketed end of the line shaft, ensures alignment of the gear faces at all times. The bevel group comprises 4-pitch gears, of 1⅝-inch face, mounted on annular bearings, the driving thrust on the axle being taken up by the regular bearings, and on the driving shaft by a 1-inch ball mounted at the end of the secondary shaft in the pocket gear on the line member.

The drive to the wheels is of the floating type, 5-jaw dogs, taking hold of the outer ends of the wheel hubs, while the vehicle load comes entirely on the axle tube structure. The housing of the group is remarkable in that a single manganese bronze casting is made to enclose both the change gear and differential groups, as shown in the accompanying picture. Two cover plates, one over the rear of the differential and the other above the change gears, give absolute access to all bearings and moving parts, the mechanism, with the exception of the driving axles and lay shaft, being removable through the opening at the rear of the group, thus permitting the mechanism to be dismounted without the use of a pit, and without removing the body or otherwise dismantling the upper works. The axle and torsion tubes are of chrome nickel steel, as are the driving axles, and are securely fastened to the bronze housing member. The torsion tube extends the full length of the main driving shaft and is supported in a ball and socket hanger, riveted to a cross member of the main frame. This comprises a socket bearing in the hanger fitted with a bronze spherical bushing in which the end of the torsion tube is permitted to slide. The group is shown in the panel of the above illustration.

In this way the torsion strains due to driving are transferred directly to the frame in simple and effective manner, while the maximum amount of flexibility between the axle and frame and axle and transmission is provided for. The longitudinal thrusts upon the axle due to traction resistance, are absorbed by means of a couple of tubular distance rods, anchored to the frame. The brakes, which are of the external-internal pattern, are mounted on the axle tubes, and are both shod with camel's hair lining.

In the front axle, which is of I-section, and a solid drop forging, is a novel form of knuckle mounting in which the car load is taken up entirely at the top of the pivot, and by a single 1-inch ball. The manner in which this is accomplished, is plainly shown in the partial assembly view here shown.

Lubrication for the entire car is furnished by a Kinwood pressure feed oiler which takes care not only of the motor and commutator bearings, but also of the torsion tube hanger, and the rear transmission group. In addition to this, all important moving parts, notably the latter, are provided with grease cups.

In addition to the regular touring car, the Pennsylvania name also will be applied to a high speed roadster of the runabout order, which will have practically the same chassis as has just been described, but will mount a light aluminum body having seating accommodations for four. In this the angle of the steering column will be somewhat increased, and the general appearance altered to give a more uniform "rake" to the superstructure.

Reliable Dayton is Redesigned.

Entirely redesigned, and with a number of features which, it is claimed, never before have been employed in the construction of the motor buggy, although well known in motor cars of the more conventional type, the 1908 Reliable Dayton will be presented in two models, known as "E" and "F", to which later will be added a coupe and a delivery wagon. The principle alterations in type, as announced by the Reliable Dayton Motor Co., 15-21 N. May street, Chicago, Ill., consist in the mounting of the motor transversely in front, under the hood, instead of lengthwise of the vehicle and in the waist, the substitution of a sliding pinion change gear of the familiar type, and the use of rack and pinion steering gear with horizontal crank lever control. Another innovation, consists in the use of a wood frame.

Model E is a single seated buggy of the conventional pattern, but improved in appearance over that of last year by the rounding off of the corners and general softening of the outlines. It has 84-inch wheel base, weighs 1,100 pounds, and sells, without top, for $780. Model F, which is a surrey, possessing the same general specifications in other respects, has 98-inch wheel base, weighs 1,400 pounds, and sells, without the top for $925. The rear seat of this type is detachable, and when removed leaves a box suitable for light delivery purposes. An extra model, to be known as type G, also is forthcoming, which will be purely a delivery wagon. It will have an 18-20 horsepower motor, and a carrying capacity of 1,500 pounds.

As to the chassis mechanism common to both of the types under consideration, the motor is of the horizontal opposed form, with cylinders 4⅜ by 4 inches in measurement, water cooled, with thoroughly approved metals of construction used in every part, notably in the crank shaft, connecting rods and bearings, and rated at 15 horsepower. The radiator is of the tubular pattern with liberal continuous flanges, and the fly wheel is fitted with fan blades to assist in the circulation of air through the radiator and over the motor.

The change speed gear, which is of the progressive type, affords two forward changes of speed, the one giving a speed range up to eight miles an hour, and the other a range of from three or four to twenty-five. The higher gear gives a direct connection between the constricting clutch on the fly wheel and the counter shaft. The final drive is by double side chain to the wheels, the sprocket rings also mounting expanding brakes. The clutch is controlled by the pedal in the usual way, and the gears are shifted by means of a short horizontal lever mounted on the steering column just beneath the steering lever itself. The rack and pinion gearing of the steering mechanism, is enclosed in a grease tight case just beneath the right side of the foot board, the steering column being vertical and ending in a horizontal lever from one end of which is upturned a crank handle, while the other is fitted with a plain grip at the end of a shorter arm, steering thus being made possible with the use of either or both hands. The frame, which is of second growth ash, is liberally reinforced at vital points. The springs are semi-elliptical in front, and full elliptical in the rear, the length being 36 inches, each set having five leaves. The wheels are respectively 40 and 44 inches in diameter, shod with 1¼-inch side wire solid tires. Timken Roller Bearing axles are employed, the steering knuckles being of an original pattern, built extra heavy.

Two Rambler Models for 1908.

For next season the Rambler line will consist of but two models, Nos. 34 and 31. Both will be five-passenger touring cars, but No. 34 will have a 32 horsepower four-cylinder motor, selective transmission with shaft drive, 112-inch wheel base, 36-inch wheels, 4-inch tires, and will be listed at $2,250, while No. 31 will be provided with the Rambler double opposed motor and planetary transmission and will sell for $1,400. When desired, the big car will be fitted with roadster body and rumble seat and the other with roadster body and torpedo deck. The 32 horsepower car is now being given a rigorous test on Western roads being driven in company with a 1907 Rambler and the drivers being required to change cars daily in order that the new comer may be proven absolutely true.

Enterprise Checked by Detectives.

It often has been remarked that the best way for a young man to build his future and make money is to launch out into business for himself. Whether or not this is true does not matter, but the idea fixed itself in the mind of F. A. Higgins, an employee of the Auto Vehicle Company of Los Angeles. Higgins did not make money quickly enough to satisfy his needs, so he systematically began to stock his rooms with sundries and accessories. He had collected almost sufficient stock to advertise an "opening day" when detectives raided his quarters. The judge fined him $75.

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RAPID WORK IN MODERN FARMING

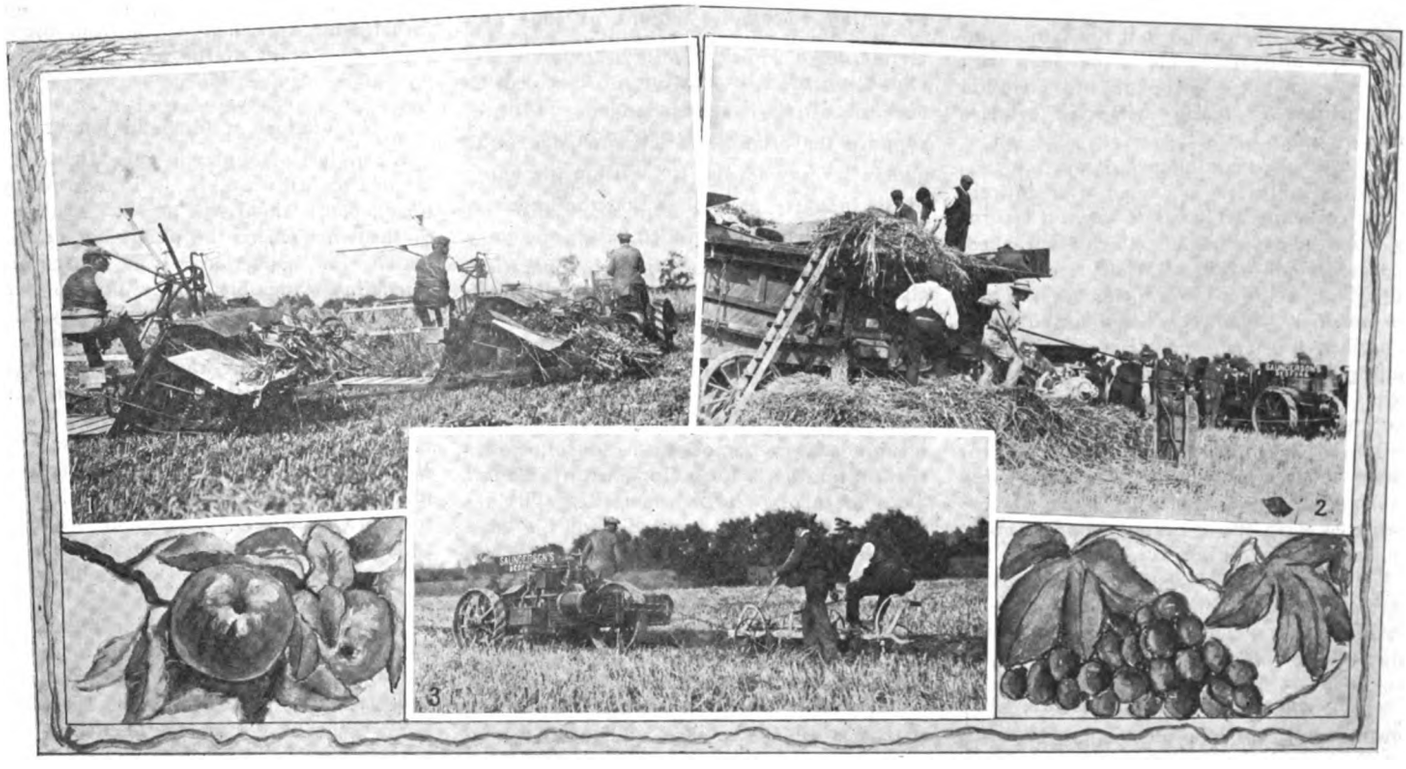
Wonderful Achievement with Gasolene Tractor—Only Seven Hours from Plow to Mill.

What is claimed as a record performance in motor farming, was recently achieved at Kirton, near Boston, Lincolnshire, England, when a gasolene tractor hauling or driving the various implements, carried out all the work incident to the turning, seeding and tillage of the land, and also the reaping of the grain and threshing and grinding ready for the market. The occasion was a test, held at the farm of Dennis Bros. The tractor employed was built by Messrs. Saundersons, of Bedford, and the thresher, drum, mill, cultivator, drill, and harrow, were all of British make, while the harvester was a Canadian importation.

Drawing two reaping machines, as shown in one of the above illustrations, an acre of wheat was cut, bound and sheaved in fifteen minutes. The same tractor, driven by a 50 horsepower motor, later supplied the energy for the threshing machine, which threshed and ground the product. In a subsequent trial, another acre plot was ploughed, drilled, harrowed and sown for a new crop, the entire cycle of operations being completed within seven hours—for which the record is claimed.

In addition to these experiments which were intended to attract attention to the possibilities of motor farming, in England, somewhat similar demonstrations have been carried out in France lately, a number of British inventions being employed in the fields at Chalous-sur-Marne.

The pictures furnish a clear idea of the way in which the tractor may be utilized for work of this sort, it being evident that in the ordinary work of the farm, as in drawing the plough, it is capable of replacing from two to four horses, doing the work at a more rapid rate, and without the requirement of any let up for feeding or rest. When it is further considered that the same machine, without alteration of any sort, also is capable of producing the power required for the operations of reducing the product to marketable form, and that on the ground, and without the loss of time and labor incident to hauling it to the mill, while the same device may later be employed to cart the grain to the shipping point, some idea of its universal applicability may be obtained. In this the gasolene driven machine is superior to the more common steam tractor because of its reduced weight, the great mass of the boiler required for the steam machine, rendering it useless for traction purposes except under the most favorable conditions.



1. TRACTOR DRAWING TWO REAPING MACHINES. SAME TRACTOR DRIVING THRESHING MACHINE
3. PLOWING, DRILLING AND HARROWING

Even Swap of Automobiles for Oxen.

While many transactions whereby live stock has been traded for automobiles have been recorded the opposite is so unusual that the occasion is worth noting. Supervisor Bigger, the davidharum of Jeddo, Mich., has just traded his three automobiles for a team of oxen, and opines that he made a "bigger" bargain.

LONDON'S MOTOR CAB SYSTEM

Terms of Employment Make Drivers Diligent—Cabbies Responsible for Injuries and Tires.

With the introduction of the motor cab into London, more or less difficulty arose in adjusting between the employers and drivers some of the minor points connected with maintenance and operation. In order to protect themselves against the wave of sharp practice and thievery which would have followed the simple hiring of the men on a wage or percentage basis, it was found necessary to adopt a special system which, in the case of the General Motor Cab Co., operating a large number of Renault cabs in the city, is working with more or less satisfaction all around, though naturally subject to more or less objecting on the part of the men.

In general, the drivers work on a 25 per cent, basis. That is to say, one-quarter of all their receipts for fares are their own, the company taking the remainder and stabling the machines, as well as cleaning them. To guard against waste of fuel and the inevitable tendency to theft, however, they do not provide the gasolene, but sell it to the drivers at a nominal rate, also renting them headlights where required, although the sort available are, as a matter of fact, useless in the city because of the restrictive police ordinances. In addition, whenever tires show undue wear the men are compelled to replace them, by which

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means, economy of operation is enforced.

The matter of accidents is safeguarded by the manner in which the vehicles are insured against damage through accident. The $2,500,000 worth of insurance held on the cabs is divided among fifty-six companies, and the general restriction is enforced by the insurance concerns, that none of them shall be driven by men who have had more than three accidents. Consequently when a driver has had his third msihap he is summarily discharged, regardless of blame in the matter and, since all other operating companies are insured to some extent and in one or more of the same companies the ultimate result is that men with such a record are compelled to abandon the business in many instances, or else move to other parts.

The ordinary maintenance of the vehicles, as already indicated, is looked after entirely by the company. That is to say, on returning from the day's work, each cab is washed, inspected, and oiled, all that remains for the driver, being to clean the brasses and the interior. With every fare earned going in part to the men, and strict penalties attending carelessness or waste, the company is thus in a way to get the best possible service out of the machines, while the men have every incentive to careful and diligent work. Their wages are not high according to American standards, but rank well as compared with those of the London horse cab drivers, averaging as a rule, from $10 to $12 per week, exclusive of fuel costs and not including tips, which, as a matter of course, rank as clear gain and add to the value of the job.

Try-out of Chicago Chauffeurs.

Admiration for the mechanic who risks his life by accompanying the racing driver in his high speed contests is perhaps not out of place, but some of it should be reserved for the bravery of Chicago's civil service commissioners who have of late been undergoing somewhat similar experiences without the stimulus of racing ambition or of glory. These unhappy men, in the course of their official duties, have had to abandon themselves to the uncertain skill of automobile drivers applying for jobs as city chaufferrs. After telephoning their respective wives, physicians and lawyers, they have with faltering step walked out to waiting machines and left the results to Providence and the would-be chauffeur. The route selected for the try-outs was through Chicago's busiest streets, over the Rush street bridge and through the Loop district. Hair-raising as were some of their escapes, they have so far managed to get through with whole limbs, but with a firm conviction that they have earned all the money they will get for the next year. The tests for the chauffeurs include the two hour drive through traffic, the repair of several deranged cars, and a written examination on motor car parts and principles.

EDUCATION OF THE CAR OWNER

Thorough Information Necessary to Make Him a Safe and Sane Driver—How He Should Get It.

Oddly enough, as the development of the motor car comes on apace and trade and manufacturing interests acquire a better working knowledge of the mechanical side of the automobile, it becomes more rather than less essential for makers and dealers to outlay an ample amount of time and energy upon the instruction of customers in the use of their machines. This is true, because of the natural tendency to presuppose that rudimentary knowledge is as general everywhere as it is within the limits of the industry, as well as that the improvements in construction which have done away with so much of uncertainty in operation, also have eliminated the need of thorough comprehension of the mechanism.

What the amateur owner and driver requires is accurate and concise information, and his usual temperament makes it advisable that it be delivered in hand-to-mouth fashion and in homoeopathic doses, rather than in text book form along with the bitter aloes of theory and mathematics. The car forms a part of his recreation or his business life. Therefore it must come to him and with it his knowledge of its needs, in the easiest and pleasantest form. It is equally essential, however, that what he learns should be well learned, and should not be misleading in any way.

The driver should not simply be taught that it is unwise to race his motor, for instance, or to climb hills on too low a gear, but he also should be taught exactly why, and in such a way that he will remember the method of reasoning which leads up to the admonition, quite as much as the rule itself. Theories and principles should be given him only as absolutely necessary, and in such suggestive fashion as will lead him to investigate further for himself, if he be otherwise. Again, above all things, his training should be thorough as far as it goes.

Probably the most satisfactory and lasting way of teaching the learner is by the direct method of contact between instructor and pupil. To this end, demonstrators should be chosen carefully and taught their business carefully, in order to enable them to determine wisely just how much or how little real information, outside the mechanical process of driving, the beginner can and will absorb with profit. To supplement this, a certain amount of trade literature should be used, similarly chosen, quite as much with reference to the individual as to the presumed amount of primary gasolene knowledge which he possesses.

Those makers who are following along this line according to more or less elaborate systems of owners' schooling, are doing so wisely and with profit. It is impossible to lay too much stress upon the need of such training, nor of the requirement of thoroughness and system in carrying it out. Personal instruction of this sort may be made a very expensive item in the selling business. In certain ways it amounts almost to a pure gratuity to the customer for which there is naught but a "cumulative" return. But when it is considered that such training is quite as beneficial to the car as to the owner, and that in that way the outlay amounts to a direct and compounding investment, its actual worth from the personal standpoint of the maker himself can no longer be questioned.

No Visitors at Michelin Factory.

When it is completed, the Michelin tire factory at Milltown, N. J., is one manufacturing plant which will not be "written up" or thrown open to the public—or any individual—for inspection. It is a part of M. Michelin's inflexible policy not to permit visitors within the confines of any of his producing properties, of which there are four others, one in France, one in England and one in Italy; in fact, it is given out by those in position to know that on one occasion the Queen of Italy expressed a desire to witness the Michelin processes at the Turin factory, the heads of which wired for Mr. Michelin's permission, which was refused, despite the majesty of the lady. The American plant is said to be a duplicate of the one in Italy.

The Milltown property consists of about 80 acres of ground and included four five-story buildings, which had been used for manufacturing purposes by the International A. & V. Tire Co. M. Michelin decided to use these only for store houses and offices, and immediately began the erection of eight new buildings which duplicate the foreign plants.

On June 3d the contractors broke ground; seven of the new buildings are completed and the eighth will be finished very shortly. Machinery was sent from abroad and this has been installed and the company is now ready to begin manufacturing. The plant when completed will have about 8½ acres of floor space and it is claimed will be the largest tire plant in America. A new 2,440 horsepower plant, operating two 1,000 kilowatt turbines, made by Westinghouse, has been installed. In addition there is an auxiliary power plant of seven hundred horsepower.

The Pittsburg Automobile Dealers' Association has been incorporated with 16 agencies represented, and last week elected these officers: President, W. N. Murray; vice-president, W. H. LaFountain; secretary, A. L. Banker; assistant secretary, Alice E. Doherty; treasurer, G. P. Moore. It was decided to hold the next show in Duquesne Garden during the week of April 4 to 11.

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ROAD ABRASION OF TIRE CASINGS

Analysis Made of Highway Dust Confirms Well Known Theories—Relatively Heavy Wear at Turns.

Considering the fact that tire casings are subject to a considerable and continuous amount of wear, it is no more than a natural conclusion that the rubber abraded from the tread surfaces must become intermingled with the road dust. Naught but the contemplative mind of an Englishman, however, would ever conceive the idea of analysing samples of dust taken from various points in a much frequented highway, for the purpose of studying the comparative effect of the highway upon tire wear under different local circumstances. This somewhat obtuse method of investigation, as persued recently, has nevertheless brought to light a point or two worthy of note as confirming certain very common and well known theories, albeit perfectly obvious ones.

Two samples taken from the Llanabar road near Barmouth in Wales, the one from a straight stretch and the other from a corner, yielded upon analysis respectively, .042 and .170 per cent. of rubber such as might have been ground from tire treads. This at once is accepted as quite natural, seeing that the greater percentage existed at the corner, the tendency to skidding, not to mention imperfect differentiation of the motive power on turns, and possible imperfections in steering layouts, readily accounting for a large amount of abrasion at such points. In addition, however, it was discovered that in the second sample were several fragments literally torn from the tread, thus showing that the destructive effect is in reality very great. One piece, the largest, was rectangular in shape, and ½ inch wide by ¼ inch long. The fact that the percentage found at the corner was more than four times that discoverable at the other point, where the road was perfectly straight, goes to show roughly the relation between tire wear on the straight course and on the turn—which is a distinct contribution to science, as far as it goes.

How to Test the Differential.

When it is desired to test the differential for suspected trouble, it is not enough to raise one of the driving wheels from the ground, or to turn one sprocket, in the case of a chain driven car, since the side tested may be in good order, while the other is more or less seriously affected. The only effective method is to release both sides, whether by raising the entire rear of the car or disconnecting both chains, and then, after letting in the clutch, turn the motor over slowly by hand, observing whether both ends of the differential shaft turn at the same speed. If one revolves faster than the other, or not at all, it may be taken that something is amiss. By blocking the one which turns freely, the amount of resistance to the motion of the other, as well as its nature, then may be determined.

Princess a Wholesale Owner.

Princess Elizabeth of Liechtenstein, whom all followers of the doings of royalty will remember as the youngest daughter of the Archduchess Marie Therese and a niece of Emperor Franz Joseph and whose beautiful castle at Stuhlweissenburg is one of the most delicatessen in South Hungary, has taken to motoring. Not wishing to attract undue attention or notoriety in her indulgence in this pastime, she has purchased 31 automobiles as a starter, and if she likes them will purchase a quantity. Meanwhile the little community of Stuhlweissenburgers are preparing to enter their claims for having "more automobiles per capita," etc., thus gaining for themselves the glories that such a reputation has to bestow.

Makes His Car Useful.

The use of the automobile for business traveling is well illustrated in the case of W. J. Dingee of New York and San Francisco, a capitalist who is heavily interested in the cement industry. Mr. Dingee divides his time between the East and West owning cement mills in Pennsylvania and California. He does all his traveling between his offices in the two cities and his mills in his 50 Matheson car. During the past few months he has been in New York and has made weekly visits to his Pennsylvania cement mills, using his car not only to travel back and forth, but to inspect the different mills, and forth, but to inspect the different mills son are now, however, on their way to the Pacific coast for a two months visit.

.. Thousands of Arrests Threatened.

About 6,000 automobilists are threatened with arrest by the Massachusetts State highway commission for not re-registering under the new automobile law. While many owners may have given up their cars and a good many others of the old registrations were of visitors who will not be touring through the State again, yet the commission is convinced that out of the 6,000 names that have failed to re-register there must be a very large proportion of residents of the State who are either careless or are wilfully ignoring the provisions of the new law, and a wholesale issue of warrants is expected to scare them into line.

Odd Wrinkle in Illinois Law.

Some advantage accrues to the married man in Illinois if his wife owns an automobile. In addition to getting free rides in a motor car by reason of his intimacy with the owner, he may drive the machine without a chauffeur's license. Some of the Illinois police did not see it that way until Attorney General Stead so decided a few days ago.

RUBBER UNDER VARIOUS NAMES

How the Gum Got Its Most Familiar Designation—"Caoutchouc" an Older One, but Restricted in Use.

The name "rubber" as a designation for a certain material with which readers are presumed to be familiar may be without high scientific warrant, but it has the merit of priority among English speaking peoples, and this fact alone has led to its use becoming more widespread than "caoutchouc" or any other term, whether more scientific or otherwise, remarks the India Rubber World.

The English designation "rubber" referred to a rubber-out of pencil marks before any one thought of the word "eraser," and while some other uses of the elastic material have become more extensive since Priestley's time, the name sticks; it is fairly well understood, it serves its purpose, it is easy to write and sperk, and the average man is too busy to consider a new name from any such consideration as that it may be more accurate or more fully descriptive

The French designation "caoutchouc" based upon a native Indian name up the Amazon, is older. And the Germans to a degree have borrowed the French name, but they also use "gummi" to a great extent. To-day "caoutchouc" is nowhere a word in common use in a rubber producing region except the limited areas under French or German control, and then only by supervisors and not by native workers. The word is in use in French rubber mills and to a slighter extent in the German. Compared with this usage the universal adoption of "rubber" wherever English speaking peoples have to do with the production or consumption of the material, gives this word a vastly greater vogue.

We notice that Continental firms introducing their products into English communities adapt the names of their firms to English practice by taking up the word "rubber," while English firms trading abroad are less apt to follow a corresponding course. Englishmen have been first to introduce rubber goods in many parts of the world, as later they have been first to introduce rubber goods in many parts of the world, as later they have been first to establish rubber planting on a practical basis, and the persistence of the names of the English (including American) companies alone seem likely to render the familiar word "rubber' ultimately the most widely used term.

Pennsylvania Tags in Yellow and Black.

Pennsylvania, which brings out a new fashion in automobile tags each year, has decided on the style for 1908. The new number hangers will be tasteful creations in yellow, with black figures.

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RENEWING WORN BRONZE BEARINGS

Method of Filling with Babbit or Other Soft Metals—Their Selection a Question of Adaptability.

A curious and none too well understood relationship exists between the composition of shaft and bearing metals and the degree of satisfaction with which bearings will act under severe and long continued service. Without going into details further, suffice it to say that the percentage of carbon in the steel of the shaft, appears to be the determining factor, and that as a rule the so-called high carbon steels run to better advantage with the ordinary bearing metals, than do those of lower grade. Just how the relationship may be determined, or in what terms it is measured, is of less importance to the average user, however, than the fact that it exists, and that designers frequently make an unfortunate choice in specifying materials, with the result that certain much loaded bearings prove to be short lived and give considerable trouble.

Often it is the case that a bearing which has worn unduly or developed a tendency to heating, may be improved, if not wholly cured, either by altering the bearing surface by the substitution of new bushings, or by lining those already in place either with babbit, or some of the high-speed antifriction metals, of which several different grades may be obtained. As a rule it is fully as advisable to line or "pack" the bushings with a soft metal of this description, as it is to attempt to form it into a bushing, the bronze shell of the old bushing serving very well as a holder for the new material, and also working to no disadvantage if allowed to come into contact with the journal at the ends. In fact a bearing of this description, frequently is found to last much longer and to give even better results, than one composed entirely of the softer metal.

The process of renewing an old bearing in this way is by no means a difficult one, and can readily be carried out in any ordinary machine shop under the direction of the owner of the car, or by any mechanic who is accustomed to the usual methods of "running in" babbit linings. The split bearings, which are those most frequently affected, are handled in the same general way as whole bushings, only being "sweated" together before being chucked on the lathe for chambering out or the final turning process.

In either case the bushing is first centered in the lathe and chambered out through the center until only about 1-16 inch thickness is left in the shell to serve as a basis for the new bearing, the ends being left intact for perhaps 3-16-inch from the outside of the journal. The part being removed from the lathe, is then "tinned" all over the counterbore thus formed, exactly as in the sweating process. Afterward it is placed over a mandrel of the same size as the shaft it is to carry, and after being brought to a uniform heat sufficiently great to cause the tin on the inner surface to run, the new bearing metal is poured in, through the oil hole if possible, or otherwise, through a suitable "sprew" constructed about a channel cut in one side of the mandrel, when it will unite perfectly with the bronze of the shell, forming what is essentially a single piece. After being cooled and dressed, either in the lathe or by scraping, it is then ready for replacement in the motor.

In one or two cars, this method of bearing construction is used in the original bearings, while in the case of one foreign car the same principle is applied to the construction of the liners for the connecting rod bearings, which are thus permanently attached to the rod end and work, as it is claimed, with perfectly good results.

Wearing Gloves for Protection.

There is more wisdom than pride in the habit of many chauffeurs and demonstrators of wearing gloves while working over the mechanism, though it hardly would appear to be the case, considering only the ridicule of dyed-in-the-wool mechanics, or the simple dictates of cleanliness, which more often than not may be at the root of the matter. As one of them explained the other day:

"There is a certain liability to slight injury while working on the machine, such as the accumulation of small bruises and scratches. These are of small consequence in themselves, but when later, they are brought into contact with the brass surfaces of the levers, and possibly with more or less brass dust when polishing the plated parts, there is more or less danger of poisoning, which, in some cases may be attended with serious consequences. The ordinary mechanic, through long service, has acquired a calous in the palms of his hands, through which nothing short of a determined knife blade can penetrate. The average driver, however, doing little or no real hard manual work, gradually loses this tough integument, even if he once possessed it, and therefore is more liable to abrasions than the other. Hence there really is some little excuse for the "dude" habit, even though it may not be generally known."

Firemen's Queer Work in a Garage.

Just why it should be necessary in extinguishing a garage fire to chop out the spokes of all the cars in sight, hack the tonneaux and smash the steering wheels, was what Providence, R. I., firemen were called upon to explain after the blaze at the garage of the Providence Motor Car Co. The firemen pleaded innocent and the police are investigating.

TIRES IN JOB LOTS AT AUCTION

Final "Outlet" of Rubber Circlets of Uncertain Vintages—Closing Chapter in A Murray Street Romance.

The last sad chapter of the tale of the tires that were never sold, known under the sub-title as "The Biter Bitten, or the Stinger Stung," was enacted under the auction flag on Murray street last week. Great big beautiful automobile tire casings, as round as doughnuts and as hard as concrete, bearing the name of a rubber company that it would be difficult to find in real life, were sold to tight-wad bidders at about $2 apiece, when the expectation last fall was that these same casings would go like hot cakes to a credulous public at prices just under those for reputable tire makers' products.

Morris & Grinberg, dear to many purchasers of second hand cars as the Manhattan Storage Co., having decided to sell out that short-lived but odoriferous mushroom "The Manufacturers' Outlet Co.," which was advertised as having been instituted to "save" the cycle manufacturers from "ruin" but which prospered not when its operations and ownership were exposed, an auction was held to close it up. Conspicuous among the "joblots" were imposing stacks of "Majestic" automobile tire casings, reaching almost to the ceiling. The story of their birth and later sufferings was told in the Motor World last fall—how a certain obscure tire concern was induced to undertake the manufacture of an immense quantity of near-tires at a microscopic figure and how it delivered the goods, collected the cash and left its enterprising customers to their agony in discovering within a few days that the tires were turning hard and dark even before they could be disposed of to the "dear public." So great was the quantity that the plungers have since been unable to get rid of any great proportion of their purchase even by showing owners of second hand cars how they could improve the selling chances of their machines by fitting them with brand new tires at a low figure. At the auction on Thursday of last week, bidding on the unique circlets was so reticent that the auctioneer, after a whispered conference with Grinberg, finally proposed an arrangement to receive bids first for such "soft" tires as the high bidder might select from the whole pile, and then put up the leavings as another lot. Under this plan, the "soft" tires brought something like $8 apiece and the "hard" leavings, constituting by far the greater number, brought in the neighborhood of $2 apiece. Small as was the original price charged by the makers, $2 was so far below it that an ineffable sadness and anguish marked their disposal at that figure.

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DEPARTURE IN CARBURETTERS

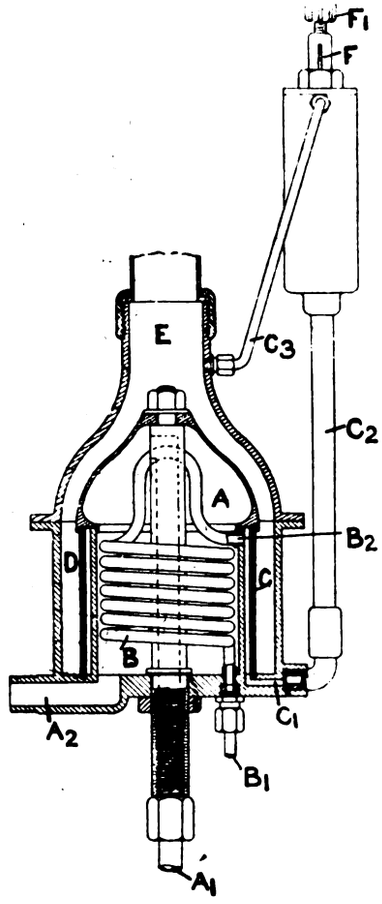
Unique Principle Applied in a New Device —Automatic Control by Fluid Shutter a Feature.

An entirely new principle in carburetter construction is developed in the Dentan, a device just introduced in Great Britain by Gosset-Tanner & Deane, in which is combined a method of surface vaporization with a system of automatic control which is as unique as it is novel. Briefly the principle is that of permitting the fuel to be drawn through a porous cup, somewhat similar in structure to those used in the construction of primary batteries of the two-fluid type, and regulating the amount of influx to the mixing chamber by varying the area of the surface exposed to the action of the motor suction. The radical feature, outside that of the method of vaporization, consists in the use of a column of mercury balanced by the action of the suction against a second column in an independent tube, and serving to exclude the fuel from contact with the walls of the porous medium, according to the height at which it is supported.

The arrangement, which mechanically, is extremely simple, comprises principally, a large jacket chamber, A, which is heated to any desired temperature by the circulation through it either of the jacket water from the cylinders, or a portion of the exhaust gases. The inlet and outlet connections for this portion of the device are at A1, and A2, respectively. The helical coil of tubing within the chamber, shown at B, serves as a conduit for the fuel, which enters at B1, and leaves at B2. About the lower and cylindrical portion of the chamber is formed a small annular chamber, C, enclosed by the outer wall of the first chamber and the cylindrical porcelain cup, mentioned above. External to this is the mixing chamber, D. The fuel is always in communication with the interior of the annulus, but in order to reach the mixing chamber, it must percolate through the walls of the cup, as will be apparent from the illustration.

A body of mercury contained in the external tube, C2, normally is permitted to flow down into the chamber through the port, C1, thereby excluding the fuel, and by its greater viscousity being retained by the porous wall of the chamber, C, instead of passing through it as the fuel would do. When the motor is running, however, the suction exerted on the upper surface of the mercury in the tube, C2, which is placed in communication with the intake pipe by the small tube, C3, causes a portion of the heavy liquid to be raised, thus lowering the level in the chamber, C, and permitting the fuel to take its place. In this way the mercury acts as an extremely flexible and sensitive diaphragm, rising and falling in exact response to the demands of the motor as manifested in its suction draught upon the mixing chamber.

The atmospheric component of the mixture is drawn in through the base of the mixing chamber where a number of orifices, D, give it free access at all times. In passing upward to the intake connection at the delivery pipe, E, it licks up the fuel exposed on the outer wall of the chamber, C, thus



vaporizing it and forming the mixture simultaneously. In this way, the device is broadly suggestive of the old-time surface vaporizers, yet not sufficiently so to in any way mar its revolutionary nature.

For purposes of regulation, a strangling valve, F, is placed at the top of the mercury tube, C2, where more or less air is admitted over the surface of the mercury, according to the position of the regulating screw, F1. In this way the height of the mercury shutter in the chamber, C, may be raised or lowered in relation to any particular degree of suction, the relative heights under other conditions, of course, remaining measurably constant. The purpose of the heating coil within the inner chamber, is that of raising the temperature of the fuel almost, if not quite, to the vaporizing point, before it is delivered to the chamber, C, as a result of which it is possible to use heavy oils or alcohol, as well as the lighter and more commonly employed motor fuels.

TIRE PRESSURE EFFECT ON SPEED

Edge's Third Series of Tests at Brooklands Track—Possible Bearing of Results on Future Design.

A third series of tests supplementing those which recently were carried out on the Brooklands track by S. F. Edge, have just been completed and apparently bear out the somewhat radical conclusion that tire pressure has little or no influence upon the speed of the car.

During the trials, the test car was timed over a flying quarter mile, equipped at different times with tires inflated to different pressures, the experiments including runs with two different sizes of tire, applied variously to the wheels. The car used was the 40 horsepower 6-cylinder Napier, and the tire pressures employed ranged from 35 to 100 pounds per square inch. The subject is of particular interest to the motorist because of the usual contention that high tire pressures are essential as reducing traction resistance, while low tire pressures tend to easy riding qualities in the vehicle. Should it be proved beyond a doubt that the low pressure tire absorbs no more power than its highly inflated counterpart, it is pointed out that a revolution in the methods of tire building may be involved in order to produce a tire which will wear well under the constant flexion which that condition involves.

For each individual test, the car was run around the track in order to establish uniform running conditions, and then was directed over the measured stretch and timed. Under these circumstances, the best time made, was 11⅘ seconds, corresponding to a speed of 76.27 miles per hour, and the slowest, was 12⅗ seconds, or a rate of 71.43 miles per hour. In the first instance 880 by 120 and 870 by 100 millimeter tires were employed on the front and rear wheels, respectively, and the pressures were respectively, 100 and 90 pounds per square inch. In the second, the sizes were respectively, 870 by 100 and 880 by 120, the pressures being 90 and 100 pounds in the two sets. Some differences existed in the combined weights of tires and wheels in the several cases, but oddly enough the difference did not appear in the result, although the actual difference of 15 pounds in the total weight of the equipment could hardly be enough to militate either way. The fact that the two extreme trials were made with the same equipment with the same inflation pressures, but with the disposition reversed, is, however, of some interest. In the fastest trial, the larger tires and higher inflation were applied to the front wheels, while in the slowest, they were applied to the drivers.

To facilitate changes, removable wire wheels were employed, several sets being used in connection with the tests. Thus,

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while one set was being used on the car, another was being equipped and inflated in the manner desired for the subsequent test. Of the results, Edge is quoted as saying:

"The most astonishing results at first sight from these tests appear to be that the speed of the car was almost unaffected by the pressure of the tires, nor did it seem to make much difference as to the size of the tires.. The car seemed qually fast whether the tires were the 120 mm. to all wheels or 100 mm. to all wheels, or whether the air pressure in the tires was 35 lbs. or 100 lbs. Although these experiments at the moment appear to my mind to be quite inconclusive, they really lead us to one of the greatest moves forward that the automobile movement has had for some time, and if by further experiments it can be conclusively proved that a small air pressure in the tire is almost equally good from a speed point of view as a high air pressure, it then only remains for the tire manufacturer to see if he can make a tire which will wear well with small air pressures. If this is the case it means, then, that we should have our motor vehicles running upon exceedingly comfortable air cushions, as undoubtedly at the present moment, owing to it being desirable to pump one's tires hard to get the maximum wear out of them, we sacrifice practically all, or nearly all, the comfort that a pneumatic tire should give. * * *

"Then, of course, again the bulk of the horse power is being utilized to overcome the wind pressure at high speeds, so that even if a flat tire added ten or fifteen per cent. to the amount of effort required, it means very little reduction in speed, as it is only ten or fifteen per cent. of quite a small amount of the engine horsepower."

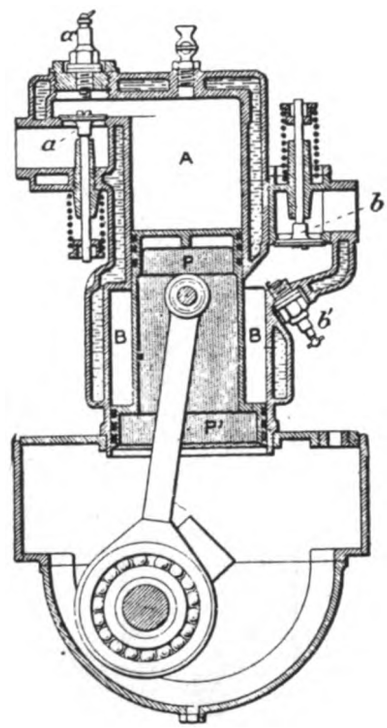
The first of the trials in this rather impromptu series, it will be remembered, dealt directly with the factor of wind resistance, and the second with the effect of car weight on speed. The comparatively insignificant effect on the speed which according to the results of this last test, result from differences in tire sizes and pressures of inflation, is directly in line with the theory that the bulk of the power expended in driving the car is put forth in overcoming the wind resistance. In this respect, the results correspond with those of the previous one. The results of the various runs are summarized in the following table:

	Tire Sizes.	Air Pressure.	Weight of Wheels.	Time for flying quarter.
Front wheels	870x100	90 lbs.	86 lbs. per pair	12⅗ secs. =
Back wheels	880x120	100 lbs.	111 lbs. per pair	71.43m.p.h.
Front wheels	870x100	50 lbs.	86 lbs. per pair	12 secs =
Back wheels	880x120	35 lbs.	111 lbs. per pair	75 m.p.h.
Front wheels	880x120	100 lbs.	113 lbs. per pair	12 secs. =
Back wheels	880x120	100 lbs.	111 lbs. per pair	75 m.p.h.
Front wheels	880x120	45 lbs.	113 lbs. per pair	12⅗ secs. =
Back wheels	880x120	35 lbs.	111 lbs. per pair	72.58 m.p.h.
Front wheels	880x120	100 lbs.	113 lbs. per pair	11⅘ secs. =
Back wheels	870x100	90 lbs.	99 lbs. per pair	76.27 m.p.h.
Front wheels	880x120	45 lbs.	113 lbs. per pair	12⅗ secs. =
Back wheels	870x100	40 lbs.	99 lbs. per pair	72.58 m.p.h.
Front wheels	870x100	90 lbs.	86 lbs. per pair	12 secs =
Back wheels	870x100	90 lbs.	99 lbs. per pair	75 m.p.h.
Front wheels	870x100	50 lbs.	86 lbs. per pair	12 secs =
Back wheels	870x100	50 lbs.	99 lbs. per pair	75 m.p.h.

TWO CYLINDERS COMBINED IN ONE

Construction which Produces Two Cycle Effect in Four Cycle Motor—New Adaptation of Differential Piston.

Motors that give an impulse every revolution for each cylinder are generally of the two-cycle type, but M. Boudreaux, a Paris inventor, has essayed the design of a four-cycle single cylinder motor that gives an



impulse every revolution instead of every other revolution. While in design his motor has but a single cylinder, in effect it is a two cylinder motor with but a single piston and crank.

This is accomplished by making the cylinder of two diameters and having the piston shouldered, as shown in the accompanying illustration. The upper section of the cylinder and piston are entirely normal, the novelty element being introduced in the provision of an extra set of valves, spark plug and other appurtenances necessary to make the lower section of the cylinder operative as a motor, independent of the upper section. Both parts of the cylinder operate on the four cycle principle, but instead of both being on the same cycle at the same time, they are arranged to alternate their power strokes, so that while the upper part, for instance, is on its power stroke, the lower part is on its suction stroke, and on the return, when the lower part is on its compression stroke, the upper part is on the exhaust stroke. Thus the one crank and piston serves to take the two sets of impulses, first from A, the normal diameter, and then from B, the larger one, operting on piston parts P and P-1, respectively. While the reports of the performance of the engine give no definite figures as to horsepower compared with weight, the results are described as being very satisfactory.

Light for Road Repairs at Night.

Where acetylene lamps having separate generators or using compressed gas, are employed, it is well to carry a few feet of flexible tubing in the tool kit for use in case of the necessity of making emergency repairs by the roadside at night. For this purpose the ordinary kerosene dash lamp while handily constructed, does not yield sufficient light to be of great utility, while many of the more sumptuously equipped machines are fitted with electric dash and tail lights, which, unless a supply of pliable cable is carried along, also are of no use at such times. For working about the tires or running gear, at night, it is of the utmost importance to have plenty of light, well regulated. For work upon the power plant, and more particularly, of course, the motor, the use of flame lights is more or less dangerous and should be governed with extreme caution. For this purpose, perhaps nothing is better than a pocket electric flash lamp, which though giving but a faint glow, comparatively speaking, is at least safe to use in the vicinity of a leaky carburetter.

New Pigment—or a Dream.

Indestructible paint for automobile bodies is a possibility if F. H. Austin, a scientific explorer, is not indulging in day dreams as to the character of a find he claims to have made while delving among the mysteries of some ancient Indian mounds in the Kern River oil field, in California. It is a hitherto unknown mineral substance which he believes is identical with the pigment of the indestructible colors used by the Egyptians and the North American Indians. United States government geologists to whom samples were sent for examination are said to have confirmed his opinion. Austin's account of his discovery is that he found around the neck of an Indian skeleton a string of beads formed from this material, which he calls "diatine." The beads withstood the test of chloroform and the heat of a red hot stove without injury.

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JERSEY FARMERS SEE REAL RACING

Immense Crowd of Them Goes Wild Over Automobile Races at Trenton Fair—Parkin Captures Three Events.

New Jersey farmers changed from motorphobes to enthusiasts on Monday of this week, 30th ult. At least those who saw the card of automobile races at the opening of the great Interstate Fair at Trenton, forgot their antipathy for motor cars in the excitement of the moment and joined the throng of enthusiastic and demonstrative spectators.

In former years it has been the time honored custom to raise the curtain to New Jersey's greatest of fairs by a card of horse races. This year, however, the management thought to keep abreast of the times by opening with thrilling automobile races, and while the horse races may be held later in the week, they have been shoved in the dark background and the automobile contests brought in the limelight. It is impossible to estimate the exact number of people that saw the races on Monday. The fair management states that the attendance was greater by 5,000 than on any previous opening day, and the figures usually run from ten to fifty thousand.

The events all were exciting and the only amusing feature of the meet was the titles of the races. All but one of them were handicaps, and they included a "Mercer County Championship" and "Championship of New Jersey." As the meet was sanctioned by and run under the rules of the American Automobile Association, the body that is supposed to govern automobile sport in this country, has established a precedent in "handicap championships" that is most amusing.

Joseph W. Parkin, Jr., of Philadelphia, who with his father acting as mechinc, recently won a notable 100 mile race at the Point Breeze track, was the crack performer. He finished first in the "New Jersey Championship," the 25-mile open and the five-mile handicap for cars between $3,500 and $5,500. The Mitchell driven by William H. Sharp of Trenton walked away with the "Mercer County championship."

The only accident occurred in the ten-mile handicap when H. F. Greenwalt's Mitchell and a Stearns touched wheels on the first turn. The first named car went through the fence and out of action with a dented radiator and a bent axle. This event also resulted in the only protest, W. H. Sharp, Franklin, claiming that Parkin's Packard had fouled him at the lower turn. With a Packard, Stearns and Thomas on scratch the race was a good one for several miles. The three honor markers fought desperately until the Stearns had trouble and dropped back. The Thomas also slowed and Parkin went after the Franklin, Mitchell and Walter out in front. Then the Mitchell ran through the fence after being crowded and the Packard and Franklin entered the final stretch of the half mile track together, with the little car nosing ahead. Parkin piled on speed and passed, winning out on the tape by less than three lengths.

Frank L. Poth, of Philadelphia, in the Stearns, won the first event, an open handicap, which brought out four starters. The Thomas quit at the end of the second mile, and the Stearns, which had started from scratch, gradually pulled down the lead of the two long markers, winning over the Mitchell.

Sharp's Mitchell made good its handicap in the "Mercer County Championship" and with the Franklin, ran away from D. Walter Harper, Stanley, the scratch man.

More interest centered around the 25-mile open than in any other events, for just before the start the elder Parkin wagered what was announced as $500 that the Packard could beat the Stearns, and Poth, the owner of the latter, covered the bet. The Stearns, handled by Endicott, got the better of the start and led for a lap or two, when it stopped, leaving the Walter, with Edward Walter at the wheel, and the Packard to contest alone for a few miles. The Stearns got going again but the lead of the other pair was too great to be overcome before the gun and Poth had to be content with third place, and the losing end of the wager, Parkin beating Walter to the tape.

Owing to the threatening weather only 18 cars started from Philadelphia in the regularity run in the morning, for which the fair management had offered a valuable silver cup to the winner. The running time was 1 hour and 43 minutes. None of the competitors finished with clean scores, but the lowest penalization was that of F. J. Sweet's Stanley, which had one point charged against it. William Vail's Pope-Toledo and J. T. Moriarty's Stanley tied for second place with two points debit and M. F. Dobbins, Stanley, was third with a loss of three points. The summaries:

Five mile handicap, open to all stock cars—Won by Frank L. Poth, 60 Stearns (scratch); second, William Sharp, 18 Mitchell (0:55); third, H. T. Eisenberg, 12 Franklin (0:55). Time, 7:03⅗.

Five mile handicap, for "Mercer County Championship"—Won by William Sharp, 18 Mitchell (1:40); second, H. T. Eisenberg, 12 Franklin (1:40); third, D. Walter Harper, 20 Stanley (scratch). Time, 7:59.

Ten mile handicap, for "Championship of New Jersey"—Won by Joseph W. Parkin, Jr., Packard 30 (scratch); second, H. T. Eisenberg, 12 Franklin (3:00); third, Frank L. Poth, 60 Stearns (scratch). Time, 14:04⅗.

Five mile handicap for steam cars—Won by D. Walter Harper, 20 Stanley (scratch); second, J. T. Moriarty, 20 Stanley (scratch); second, J. T. Moriarty, 20 Stanley. Time, 7:26.

Five mile handicap, for cars listing at $3,500 to $5,500—Won by James Parkin, Jr., Packard 30 (scratch); second, Edward Walter, 40 Walter (0:25); third, Frank L. Poth, 60 Stearns (scratch). Time, 7:02⅕.

Twenty-five mile open—Won by James Parkin, Jr., Packard 30; second, Edward Walter, 40 Walter; third, James Endicott, 60 Stearns. Time, 36:31.

Tests for Women Chauffeurs.

Miss Katherine Lockwood, who once worked as a china painter in Los Angeles, is reported in Chicago looking for a job as chauffeur. She is ambitious to be the first professional woman chauffeur and is convinced that there is in the profession a bright future for self-reliant women. Miss Lockwood claims to have studied the mechanism of an automobile to such effect that she can get beneath a machine and make repairs as well as a man.

Of course it is apparent that Miss Lockwood believes other women can do just as she has done and can do. But her chief claim for woman's eligibility to the profession is her sobriety. "It would not make any difference in the safety of those in the car if they did dally with the booze," she says, "for I would be sober and steady at all times." That is all very well. At the same time, if women are to be examined for licenses as chauffeurs it would be necessary to introduce a mouse test. The usual effect of a mouse upon a woman is well known, and one of the little rodents might happen to get in among the impedimenta of a touring party. Then there are snakes; a woman's fright at sight of a snake caused an automobile accident last summer. If women are to be professional chauffeurs they should be able to stand the mouse test and the snake test.

Newark Club Plans Endurance Contest.

An ambitious project to hold a 24-hours endurance contest for stock touring cars over New Jersey roads is being fathered by the New Jersey Automobile and Motor Club of Newark. The scheme is yet in embryo and nothing definite will be decided until the club board of directors meets next week. It is planned to start the contest on a Friday, probably November 15th, and finish the following day. Just whether the promotors will disqualify those contestants who exceed the limit allowed by law or whether they will invite speeding and consequent law breaking is something that has not been made plain yet.

Hartford Gymkhana Declared Off.

Because the infield of Charter Oak Park is to be ploughed up and sown with grass the Automobile Club of Hartford will not be able to hold its gymkhana meet which had been carded for the 19th inst. A long and interesting program was arranged and several entries had been secured when the club learned of the decision of the track management to dig up the field upon which the events were to have been held. A postponement until nevt spring followed.

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NOT A RESPECTER OF PERSONS

Commissioner Smith's Enforcement of Law In New Jersey—"Boss" McNichol Finds His "Pull" Worthless.

When State Senator James B. McNichol of Philadelphia, Pennsylvania's political "boss" wants to travel in his automobile between New York City and his home, it will be necessary for him to find a route carrying him outside of New Jersey. In that state Mr. McNichol, as an automobilist, is what the high-sounding language of diplomacy calls "persona non grata." The only number that state is willing just now to issue to him for his automobile is "23." So if Mr. McNichol would drive his automobile from Gotham to the Quaker City it would be necessary for him to take some such route at to Tarrytown on the Hudson; thence across the river to Nyack and on to Tuxedo and Middletown, where the route to Dingman's Ferry could be picked up, leading down the Delaware through the Delaware Water Gap to Easton; then direct to Philadelphia.

The reason for this roundabout journey of some 240 miles, if the Senator feels that he must travel in his automobile, is that he and the New Jersey Department of Motor Vehicles are at odds. The trouble began when the Senator recently made a trip to Atlantic City at a speed not recognized by New Jersey law except as cause for the imposition of fines or other penalties. Mr. McNichol being only a state senator and not a foreign diplomat there was no "lese majesté" in his arrest, conviction before a justice of the peace and condemnation to pay a fine. Appealing the case, he secured the return of the fine, on a technicality.

Then State Motor Vehicle Commissioner Smith took a hand in the matter and the Senator was invited to a seance with that official. The result was that the Senator's New Jersey license was revoked. A second hearing was given the Senator on account of his high public position, but Commissioner Smith could not be made to see the wisdom of restoring the license. Later, when W. J. McNichol, son of the Senator, made application for a New Jersey license, requesting No. 342, his father's old license number, the application was turned down on the ground that the application was merely a new move to reverse the commissioner's action. It was regarded as a variation of the Senator's plan for getting a new license under similar circumstances in Philadelphia, where he got one in his wife's name.

This evidently drastic treatment of an outsider is justified by the Jerseyites who endorse it by certain allegations to the effect that Mr. McNichol had charged corruption on the part of the officials who arrested him; had boasted that he was going to abolish what he called "the oppression of motorists" in New Jersey; and had tried to bring political influence to bear upon Commissioner Smith when the matter was before that official. It is admitted, however, even by some of those who regard Mr. McNichol as having shown a disposition to ride roughshod over New Jersey's law, that he has been made to some extent responsible for the ill-advised utterances of foolish friends who have inflated some of his own not overwise remarks. At the same time those who are willing to give him the benefit of every doubt charge him with adopting "boss" tactics of the ward-heeler type and in over estimating the strength of his "pull" outside his own State. It is said he supplied his personal cards to certain of intimates who purposed "hitting it up" in New Jersey, it being his impression that his name would be sufficient to cause any constable or policeman to take to the woods. The boss's friends are said to be looking for him now to administer a solar plexus wallop that will send Commissioner Smith through the fence, but it may be remarked that the commissioner is strong in the abdominal muscles.

The McNichol case is not the only one in which Commissioner Smith has demonstrated that he is no respecter of persons and that he means to apply the law without fear or favor. Although it is not generally known, he has not feared even to tackle a great New York daily, which boasted of sending a touring carload of its papers over the New Jersey roads at a mile a minute pace. He not only revoked the registration of the car and the license of the driver, but he notified the publishers that he would levy upon any of their property that might find its way into the State. Similarly he "went for" one of the non-resident tradesmen who made more or less noise about a fast run from Philadelphia to Atlantic City. Registration and license certificates were cancelled and the tradesman notified that not only would no licenses be granted to anyone in his employ, but that he himself would be arrested and his car sequestered the very first time he set foot on New Jersey soil. The culprit in question was extremely anxious to visit Atlantic City during the summer, but if he did so it was under cover of darkness or in a car not of his concern's manufacture. On another occasion an ambitious young man who let it be known that he purposed establishing a Philadelphia-New York record received word over night from the New Jersey commissioner that if he attempted anything of the sort he would find the police awaiting him and that it would be a long time before he again drove a car in New Jersey. The young man delayed the attempt, and dodging the cops he made a fairly swift trip, but he never boasted of it save in private, and his employers never advertised it.

FIGHTING THE BAY STATE LAW

Tyler Appeal Keeps the Islanders of Nantucket Busy—Ashfield's Closed Roads Give the Courts Another Case.

Frank J. Tyler of the Maxwell-Briscoe agency in Boston is giving the Nantucket people the fight of their lives in their war to keep automobiles off the sacred soil of their picturesque island. The Motor World has told of his invasion of the island with a Maxwell touring car, and of his being tried, convicted and fined.

An appeal being in order, the case has been carried up to the Superior Court, where it is now pending. Meanwhile Mr. Tyler has added to the agitation of the islanders by announcing that next summer he will establish an automobile bus line between the town of Nantucket and 'Sconset.

The matter has got into politics, also. In Massachusetts the people spend one half the year campaigning for the election of state officers and a legislature which is in session the other half of the year. Petitions to the legislature, asking for the enactment of a law which will be effective in keeping automobiles away from Nantucket have been in circulation on the island ever since Mr. Tyler's invasion during the summer just past. Would-be legislators are asked to commit themselves to it.

Nantucket has come to the conclusion that the existing law, ridiculous as it is, does not give towns the power it was supposed to confer. The case of Mr. W. V. Birney, preceding the Tyler case, and Mr. Tyler's pertinacious fight, have caused the islanders trouble and expense which they have not relished, and they want a law that will be open to no attack.

One of the chief grounds of the Birney-Tyler attack upon the law is the constitutional question involved in the exclusion of any particular class of vehicles from the public roads. This point, which will figure in the Tyler appeal is to be tested in another case involving circumstances which throw a flood of light upon the ridiculous features of the law to which the Motor World several times called attention. Arthur Kingsbury of Northampton was convicted in the District Court of Franklin, on September 27, of having driven his car over a "closed" road in the town of Ashfield, and was fined $10. Mr. Kingsbury had driven forty miles from Springfield to see an Ashfield man on a business matter. There were three routes to this man's house and every one of them was posted as closed to automobiles. Mr. Kingsbury chose the route that would take him over the least length of closed road, but nevertheless he was arrested. He has appealed the case, and will claim that the law is unconstitutional in that it obstructs travel.

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1908

Announcement

E. R. THOMAS MOTOR COMPANY

1908

Every season the E. R. Thomas Motor Company adds something new, something progressive, something that departs from ordinary lines. This year is no exception. We enter the new season with a full line of cars, ranging from four cylinder, 20 horsepower cars, to six cylinder, 70 horsepower cars. The styles include runabouts, tourabouts, touring cars, cabriolets, broughams, landaulets, and limousines, a line varied and complete enough to suit every high class requirement.

One of the new lines is the 4-20 Thomas Town Car, designed by M. Gustave Chedru, of France. Runabout, brougham, landaulet, limousine and cabriolet and doctor's car bodies are fitted to these cars.

Town cars are required in every family. They have gained their vogue abroad and America now demands them. For women, in addition to park and suburban driving, they are a necessity for calling, for shopping, for theatrical and social functions. They are sure to take the place of the family carriage, having a radius of 100 miles per day instead of 25 for a horse-drawn vehicle. They operate more safely and economically and are simple and quiet enough for the most nervous to ride in.

For men, they will be utilized for business, carrying them quickly, quietly and safely between their city and suburban homes and their places of business, pleasurably and comfortably alike in fair, rainy or cold weather. For doctors the cars built especially for them will prove invaluable. They are always ready at a moment's notice for any call he may make on them. The center of gravity is low, preventing rocking and skidding and permitting easy ingress and egress. They are short to permit turning in narrow streets without stopping or backing. They are extraordinarily flexible and quiet—even the exhaust pipe being water-cooled to reduce noise. Their simplicity and the high efficiency of their mechanism, coupled with light weight, denote the most marked advance in automobile construction in years.

The 6-70 Thomas Special will surely take the lead in high powered six-cylinder cars. All the old substantial Thomas features have been incorporated and this car will astonish the most expert by its smooth and quiet running on high gear at the lowest and highest speeds or taking the worst hills and roads on high gear as smoothly and quietly as many well powered cars will on good roads without in the least taxing the mechanism.

The 4-40 Thomas Detroit is a marvel of lightness and smoothness. It has a dash and style in appearance and action that fascinates the automobile expert. With good wide, roomy seats for five—plenty of room, plenty of reserve power, plenty of fine finish, plenty of everything—it makes you wonder how, at the same price, we can afford to improve so much over last season and give so much more than any competitor in our class.

The answer is—We rely on decreased competition and greatly increased volume of business and have constructed a large, new concrete and steel, fireproof factory in Detroit to supply the increased demand.

Next is the Old Reliable Thomas 4-60 Flyer, the car that ran 21 days, 3 hours and 29 minutes, in zero weather and storms, on frozen, muddy and sandy roads without stopping the motor; that has won 75 per cent. of the contests it has entered and more world's records than any other car; that unquestionably won the honors of the Glidden tour, completing the entire distance, and then from New York to Buffalo overland, without raising the hoods, without mechanical adjustment, without involuntary stop of any kind, without any perceptible wear of tires, and with but three nail punctures on two cars, and were kept running in Buffalo for several weeks without raising the hoods or cleaning the cars—all this leaving them in as good condition as when they started.

The 4-60 Thomas Flyer has been redesigned by H. E. Coffin and Gustave Chedru, and though the cylinders and mechanism are practically the same, with the same power, the Flyer is miles faster, much smoother, quieter, lighter, roomier than ever. Though having great clearance, the car is lower and racier in appearance, having been changed to meet modern views.

Because of our great increase in facilities, we propose to extend our trade to territories hitherto neglected, and cordially invite all automobile dealers and users to visit our factories for demonstrations and inspection. Pamphlets and photographs will be sent on request.

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MORE HILLS FOUND IN ILLINOIS

Rockford Club Celebrates the Discovery by Climbing Contest—Good Sport on Big and Little "Bumps."

Although the State of Illinois and the Desert of Sahara are nearly alike insofar as their flatness is concerned, the former has a few "warts" on its surface, which topographers evidently overlooked when they made their maps, but which recently have been discovered by exploring automobilists with hill climbing desires. One of these bumps was discovered at Algonquin where the Chicago Automobile Club has held two successful climbs and the other has just been found at Rockford by the automobile club of that place. To fittingly celebrate the latter discovery a hill climb was held on it Saturday, 21st ult.

Rockford's course consists of two hills—the "quarry" hill with a stiff ascent and a smaller grade. "Long" ones, they call them, the entire length of the course being 1,000 feet. However, some good sport was furnished for several hundred spectators and local partisans had opportunity to back their favorites with real spending paper. The cars were sent over the entire course and then two events were run up the shorter hill only. The best time of the climb was made by C. W. Yeager's Ford, in 38⅘ seconds. The summary:

Runabouts.

1 C. W. Yeager, Ford..... 0:38⅘
2 William Barnes, Ford 0:45⅘
3 J. Briggs, Reo 0:53⅘

Light Touring Cars.

1 H. Havens, Buick 0:45
2 James Rogers, Premier 0:49⅘
3 Sherman Letts, Franklin 0:58⅘
4 Duncan Rogers, Rambler..... 1:04⅘

Heavy Touring Cars.

1 William Barnes, Ford 0:41⅘
2 L. G. Harrison, Oldsmobile .....

High Gear Slow Race.

1 William Barnes, Ford 2:10⅘
2 H. Havens, Buick 1:28⅘

Special Slow for Steam Cars.

1 William Ziock, White 4:45⅘

Special Steam Cars.

1 William Ziock, White 0:47

Light Touring Cars, Four Passengers.

1 H. Havens, Buick 0:55⅘
Also ran—Duncan Rogers, Sherman Letts and James Rogers.

Runabouts—Short Hill.

1 C. W. Yeager, Ford 0:44⅘
2 J. Briggs, Reo 0:49⅘

Light Touring Cars—Short Hill.

1 H. Havens, Buick 0.43
2 James Rogers, Premier 0:45⅘

Tried to Run on Water.

Abbotsford, Ind., claims the distinction of having one of the most absent-minded men in the country. His name is F. A. Beard and he owns an automobile. The other day Beard stopped at a farm house to procure water to pour into the cooler, but absent-mindedly poured it into the gasolene tank. It was several hours before he discovered why his car wouldn't run.

Roman Roads Excelled by American.

That better roads and cheaper are built in America to-day than were constructed by the Romans and Carthagenians 2,000 years ago, was the assertion made by J. H. Dodge, road expert of the good roads department of the Agricultural Bureau at Washington, in an address before the fourth annual convention of the Indiana State Association of County Commissioners, at Indianapolis, last week.

"In those days roads were built at a cost of not less than $50,000 a mile," said Mr. Dodge. "Stone and gravel were put on to a thickness of three feet, and the builders paid no attention to grades and curves. They made great cuts through mountains and made enormous fills in places where a slight deflection would have taken the road around the expensive work. But these roads were easily worn down by traffic and wagon tracks made depressions in them. Hundreds of years later the depth of the road material was reduced to two feet, then to one foot and less, until now the United States Government is building roads and advising States and countries to build roads that are only four inches deep. And the results are better than in the olden times, because the foundation is better and is more scientifically constructed."

The speaker advocated the use of heavy road rollers as the most important and useful means of constructing good roads, reasoning that heavy rollers make the foundation solid and hard, a very necessary thing in road building. He also said that the oiled road is the most durable, oil preventing the road surface from being ground into dust and blown away. Gravel roads becoming worn and rutty, they should be repaired by spreading gravel in the depressions and rolling it with a heavy roller.

Sleeping Owner not Responsible.

That a person is not responsible for the actions of his chauffeur if the latter is asleep was the substance of a decision by Judge Wolfe, rendered in the Superior Court, New Haven, Conn., on Friday last, 27th inst. His decision freed a prominent Yale senior who was arrested when his car had exceeded the speed limits the day before. The constable who made the arrest testified that the college student and a girl companion were lying back in the tonneau with their feet upon the seats in front as if they were asleep. Such an admission was just the chance the lawyer for the accused was waiting for. He promptly moved that the judge dismiss the case on the ground that if the accused was asleep he was not responsible for what the chauffeur did. The motion was granted.

CLOSE FINISHES AT FREEPORT

Automobile Meet Enlivened by Motorcycle Events—Van Sickle Makes the Fastest Time of the Day.

Although the meet at Freeport, Ill., on Tuesday, 24th ult., was supposed to have been an automobile gathering with a few motorcycle events thrown in as an added attraction, it was the little two-wheeled vehicles that carried off all the honors and furnished the keenest racing. The weather was cold and clammy and as the automobile events were not well filled the spectators did not warm up to any great extent until they became interested in the close finishes between the motorcyclists. The fastest time of the day was made by Charles W. Van Sickle, of Hammond, Ind., on a motorcycle, who rode a mile exhibition from a flying start in the fast time of 1:16. The summaries:

Five mile motorcycle, open—Won by Charles W. Van Sickle, Hammond, Ind. (Indian); second, Lewis Dodge, Monroe, Wis., (Indian); third, F. F. O'Dell, Monroe, Wis. (Indian); fifth, C. W. Avery, Rockton (Harley-Davidson). Time, 6:42½.

Five miles, for stock cars—Won by E. L. Weiant, Buick; second, Fred Jastram, Ford; third, R. K. Farwell, Reo; fourth, Joseph Benston. Time by miles, 1:45, 3:34, 5:16½, 6:54, and 8:31.

Three miles for single cylinder motorcycles—Won by C. W. Van Sickle (Indian); second, F. F. O'Dell (Indian); third, R. H. Comstock (Harley-Davidson); fourth, C. W. Avery (Harley-Davidson). Time, 4:19½.

Two miles judgment contest, 7 minutes—Won by Dr. Stephen Matter, 7:07; second, Dr. L. H. Matter, 7:10; third, Dr. Kryder, 6:45. Also ran—Farwell, Weiant, Wanner, Burrell, Schulz, Jastram, Hall and Benston.

One mile motorcycle exhibition, flying start—By Charles W. Van Sickle, Hammond, Ind., (Indian). Time, 1:16.

Three miles, novelty—Won by John Guyer; second, R. K. Farwell; third, F. A. Schulz; fourth, Fred Jastram. Time, 9:06½.

Two miles, double cylinder motorcycles—Won by Lewis Dodge (Indian); second, F. F. O'Dell (Indian). Time by miles, 1:28 and 2:46.

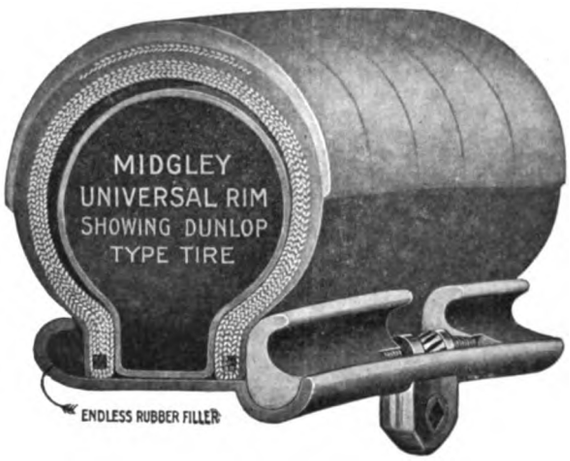
Three miles for runabouts—Won by Fred Jastram; second, R. K. Farwell. Time by miles, 1:53, 3:30, and 5:05¼.

One mile slow race—Won by Dr. L. H. Matter. Time, 12:45. Also ran—Weiant, S. Matter, Farwell, Burrell, Russell, Jastram and Kryder.

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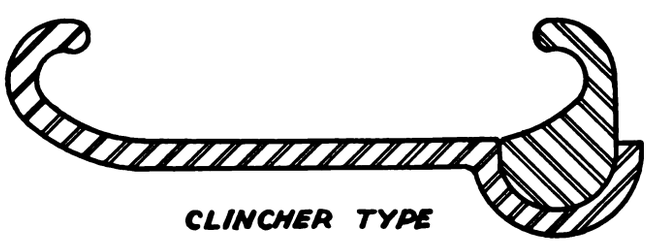
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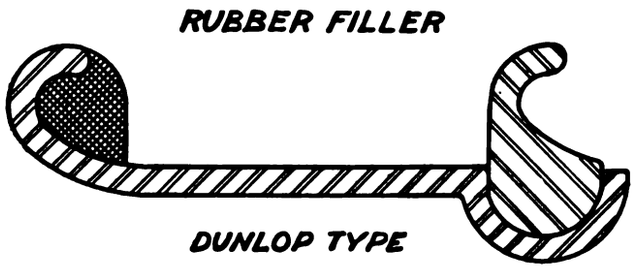
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The Week's Patents.

862,041. Circuit Maker and Breaker. John Wilkinson, Syracuse, N. Y., assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y., a Corporation of New York. Filed April 15, 1907. Serial No. 368,167.

1. In a circuit maker and breaker, fixed and rotatable elements, one element comprising a ring-shaped part of insulating material, contact pieces detachably seated in a circular series on an inner face of the ring shaped part, and spaced apart, and metallic bearing members detachably seated on said inner face between the contact pieces and substantially filling the spaces between said contact pieces, the wearing faces of the contact pieces and bearing members being disposed in substantially the same curved line and forming a substantially continuous hardened metallic path, and the other element having means coacting with the wearing faces of said contact pieces and bearing members, substantially as and for the purpose described.

862,063. Vehicle Wheel. James F. DeJarnette, Omaha, Neb., assignor to Eby Manufacturing Company, Omaha, Neb. Filed Oct. 1, 1906. Serial No. 336,818.

1. A vehicle wheel comprising a tire; a hub; resiliently mounted spokes extending radially from said hub to said tire; a series of inwardly extending guides mounted upon said tire; a series of rigidly mounted radially extending spokes upon said hub and having outer terminating ends; slot-forming housing boxes mounted upon said terminating ends of said rigidly mounted spokes, said housing boxes forming a lengthwise extending slot therein; said series of inwardly extending guides adapted to be seated with-fluid is maintained at a constant level, a feed outlet from said cup to said air conduit, said outlet having a feed nozzle within said air conduit and having its delivery end above the level of fluid in said cup, said air conduit having its area contracted adjacent the delivery end of said feed nozzle by means of an internal annular rib projecting inward from the wall of said conduit.

862,099. Device for Automatically Disconnecting Power-Driven Pumps. Axel L. Olson, Essex, Conn. Filed May 29, 1906. Serial No. 319,307.

1. The combination with a vehicle having a tire to be inflated, of a pump supported by the frame of the vehicle, said pump being independent of the wheels of the vehicle, an air conduit for supplying the tire with air from said pump, means including a rod for controlling the power operation of the pump, an air receiver connected with the air conduit, a piston in said receiver, and means whereby variations in the position of the piston due to the air pressure will shift the position of said rod.

862,100. Valve Mechanism for Internal-Combustion Engines. Lafayette M. Osborn and James E. Mannis, Topeka, Kan. Filed Feb. 2, 1906. Serial No. 299,073.

1. The combination of the outer casing provided with ports and the annular channels extending around the inside, a valve bushing having a partition and holes and leading to said respective channels, a cap, a hollow cylindrical puppet-valve having the holes to always form passage from port to the interior of said valve, and the hollow stem extending out through the cap and provided with a collar, a second valve seated at the open end of the cylindrical in said series of lengthwise extending slots formed by said housing boxes.

862,070. Adjustable Friction Belt for Automobile Tires. Emil Grieder, Woodbine, Iowa, assignor of one-half to E. J. Cole, Woodbine, Iowa. Filed March 23, 1906. Serial No. 307,624.

1. A friction device for vehicle cushion tires, comprising a flexible belt secured non-slipping upon the periphery of the tire, and having secured thereon at regular intervals a series of outer lengthwise and transversely curved bearing plates, and having terminal ends; each of said outer lengthwise and transversely curved bearing plates having secured thereon an outwardly extending friction lug formed with a transverse curvature, with reference to the friction belt; a lengthwise extending transversely curved plate secured upon the outer side of the flexible belt near one of its terminals and having a transversely formed slot therein, a lengthwise extending transversely curved plate secured upon the outer side of the flexible belt near its opposite terminal and having an outwardly extending transverse lug formed upon its outer end adapted to have a seating within said transversely formed slot.

862,083. Vaporizer for Explosive Engines. Charles I. Longenecker, Milwaukee, Wis., assignor to International Harvester Company, a Corporation of New Jersey. Filed Jan. 19, 1907. Serial No. 353,008.

1. A vaporizer for explosive engines comprising, in combination, an air conduit com-



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municating with the engine cylinder, and having a substantially uniform area throughout its length a feed cup in which the motive valve being provided with a stem extending out through the hollow stem of the first valve and provided with a cap, a compression spring between the collar and the cap, and a compression spring between cap and the hollow stem, substantially as set forth.

862,250. Air Cooling System for Explosive Engines. Reinhold Herman, Crafton, Pa. Filed April 25, 1906. Serial No. 313,526.

In an automobile, a multi-cylinder engine, and an enclosing hood therefor having an intake in front of the engine and an air discharge in the back of the engine, the said hood being tapered at the rear of the engine and having an extension projecting beyond the tapered part, and the exhaust pipe of the engine being extended into said tapering portion of the hood and acting when the engine is working to create a constant current of air through the hood.

862,377. Explosive Engine. Frank W. Bacon, Omaha, Neb. Filed June 15, 1906. Serial No. 321,899.

1. In an explosive engine, an inlet valve having a tubular stem, an exhaust valve positioned within said tubular stem and controlling the passage of exhaust gases through the same, and means for actuating said valves at the proper relative periods.

862,465. Tire Clencher and Rim. George Lanoir, Washington, D. C. Filed Nov. 4, 1905. Serial No. 285,940.

1. In a tire retaining device, the combination of a rim, made in two parts, an inner member, an outer tire bearing member, said inner member consisting of a horizontal central part, and two general lateral parts; said member, consisting of a central horizontal part, equal in width to said part, and two semi-circular outer parts, terminating in lips, overlapping and adapted to slide on the edges of the upper curved parts, when said members are brought together, substantially as shown and described and for the purposes set forth.

862,414. Brake for Automobiles. Charles J. Roberts, Paoli, Pa. Filed July 5, 1906. Serial No. 324,890.

1. In a device of the character described, the combination of a beam associated with the body of a vehicle, said beam having a horizontal flange and a vertical web, a brake shoe disposed under said beam, links connecting said beam and said brake shoe and an extension on the forward side of one of said links at the lower end of said link, and an extension on the after side of one of said links at the upper end of said link, said brake shoe comprising a horizontal flange and a vertical web, substantially as described.

862,448. Explosive Engine. Gustave Cornilleau, Paris, France. Filed April 20, 1906. Serial No. 312,782.

1. Regulating mechanism for explosion engines comprising a rotary spindle, an adjustable inlet valve operating cam mounted thereon, an exhaust valve operating shaft, a cam thereon in combination with a controlling shaft for said inlet and exhaust operating devices, a connection intermediate the controlling shaft and the inlet operating cam spindle for adjusting the throw of the cam mounted thereon and a connection for longitudinally moving the exhaust operating cam shaft substantially as set forth.

862,556. Equalizing Suspension Device for Vehicles. Robert G. Handy, Bay City, Mich. Filed Oct. 25, 1906. Serial No. 340,531.

1. The combination with a frame, axles and wheels, of an equalizing suspension device comprising a pair of L-levers pivotally secured intermediate their ends to two opposite sides of the frame, the long arms of the levers crossing each other, links pivotally secured to the opposite ends of the axle, the free end of each long arm being pivotally connected to the free end of that link farthest from the point of connection of the lever and frame, and a spring connecting the free ends of the remaining arms of the levers.

862,563. Lamp Holder. John W. Kerr and Lucius A. Hine, Chicago, Ill. Filed Dec. 28, 1904. Serial No. 238,598.

1. A lamp bracket or holder comprising a fork whose members are rotatively adjustable upon a common axis with relation to each other to accommodate different sizes or forms of lamps, said members being adapted to be held against spreading by the lamp which they support.

862,682. Spring Support for Motor Cars. Johannus J. Vanden Bergh, The Hague, Netherlands. Filed Feb. 1. 1907. Serial No. 355,270.

1. In an arrangement of spring supports for motor cars, the combination of springs, an axle supported by means of such springs, levers hinged on bearings of the carriage frame and on the axle, rods hinged on the carriage frame and rubber springs arranged on the said rods between the frame and the hinged levers and consisting of rubber discs of different size and strength, substantially as described.

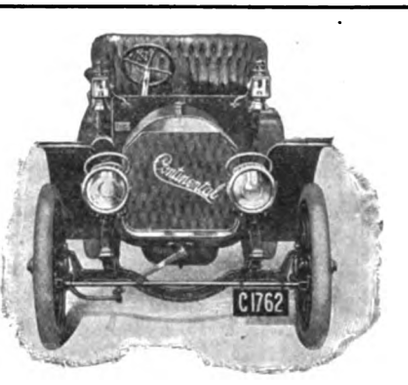
862,702. Wheel. Herbert F. Broadhurst, London, England. Filed Nov. 17, 1906. Serial No. 343,859.

1. A spring road wheel for vehicles, consisting in the combination of a rim portion displaceable transversely to the axle; a hub provided with check plates adapted to confine such displacement of the rim portion to movement of said portion in its own plane; guides integral with the hub and rim portions respectively and extending approximately radially to the wheel; and springs in compression interposed between the guides on the hub and rim portions and each adapted on the one hand to slide so as to offer no resistance to stresses transmitted in the plane of the wheel in a direction parallel to the respective guides, and on the other hand to offer yielding resistance to stresses transmitted in the plane of the wheel in a direction not parallel to the respective guides, substantially as described.

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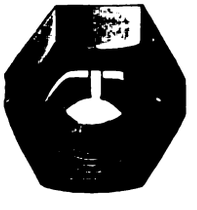
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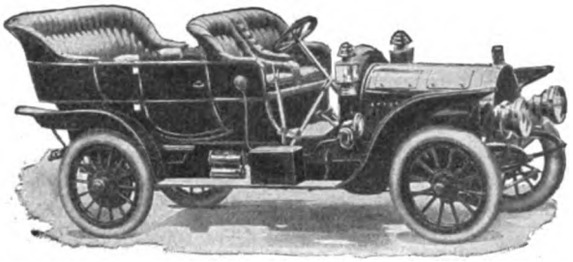
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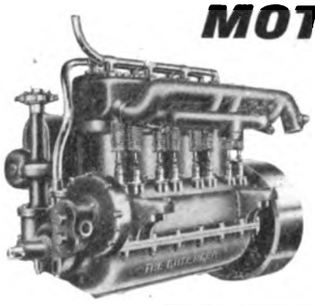
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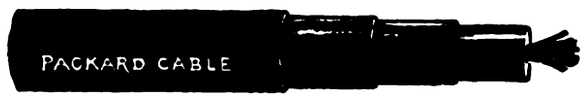
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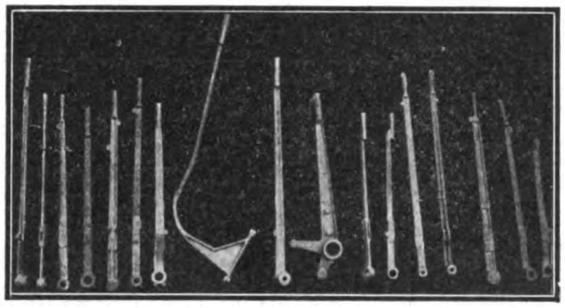


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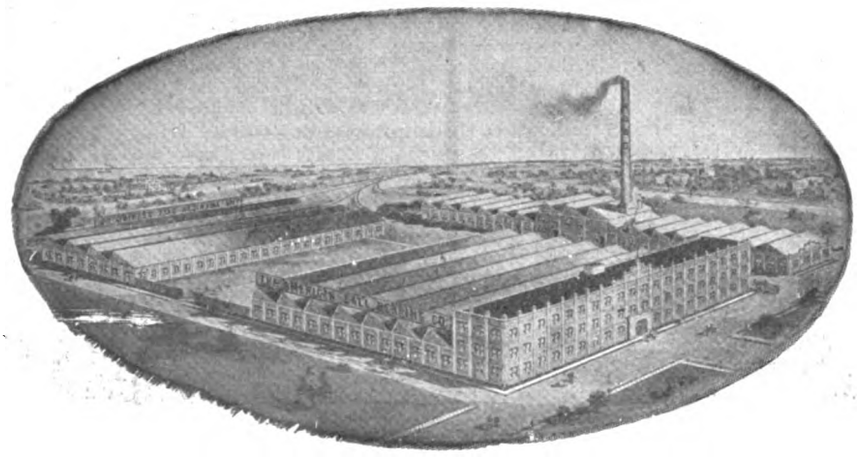
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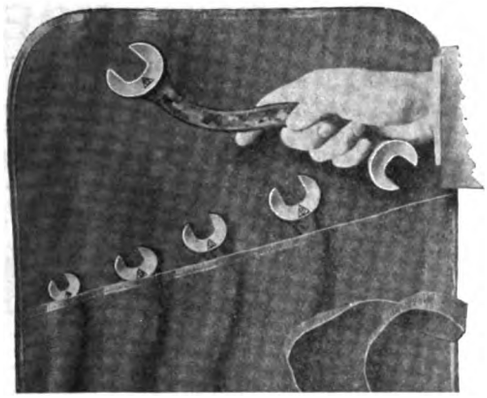
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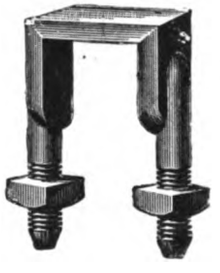
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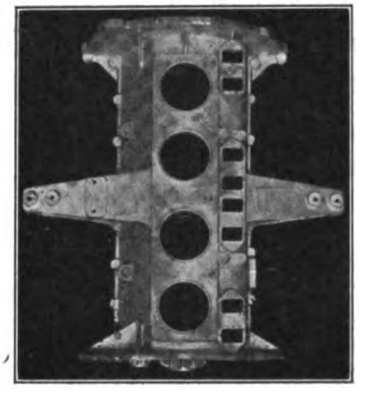
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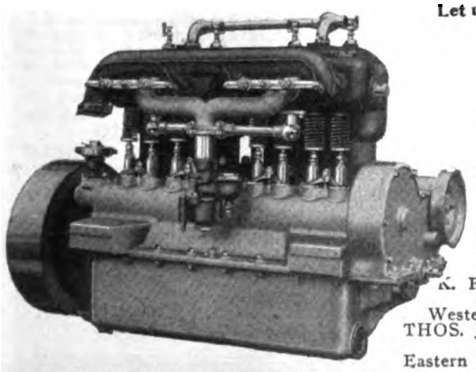
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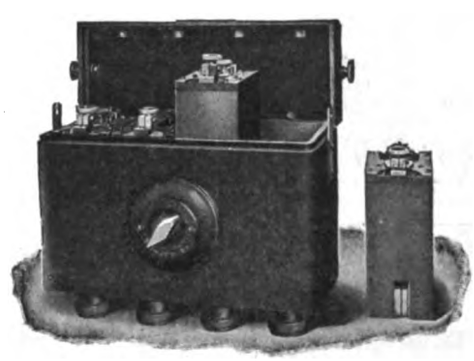
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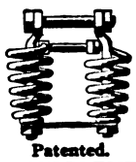


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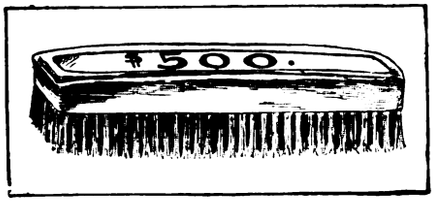
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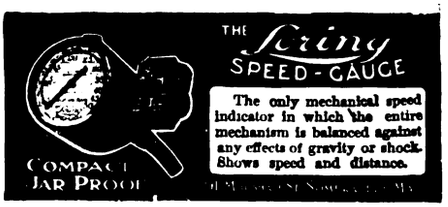
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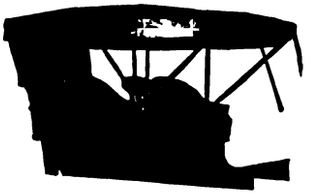
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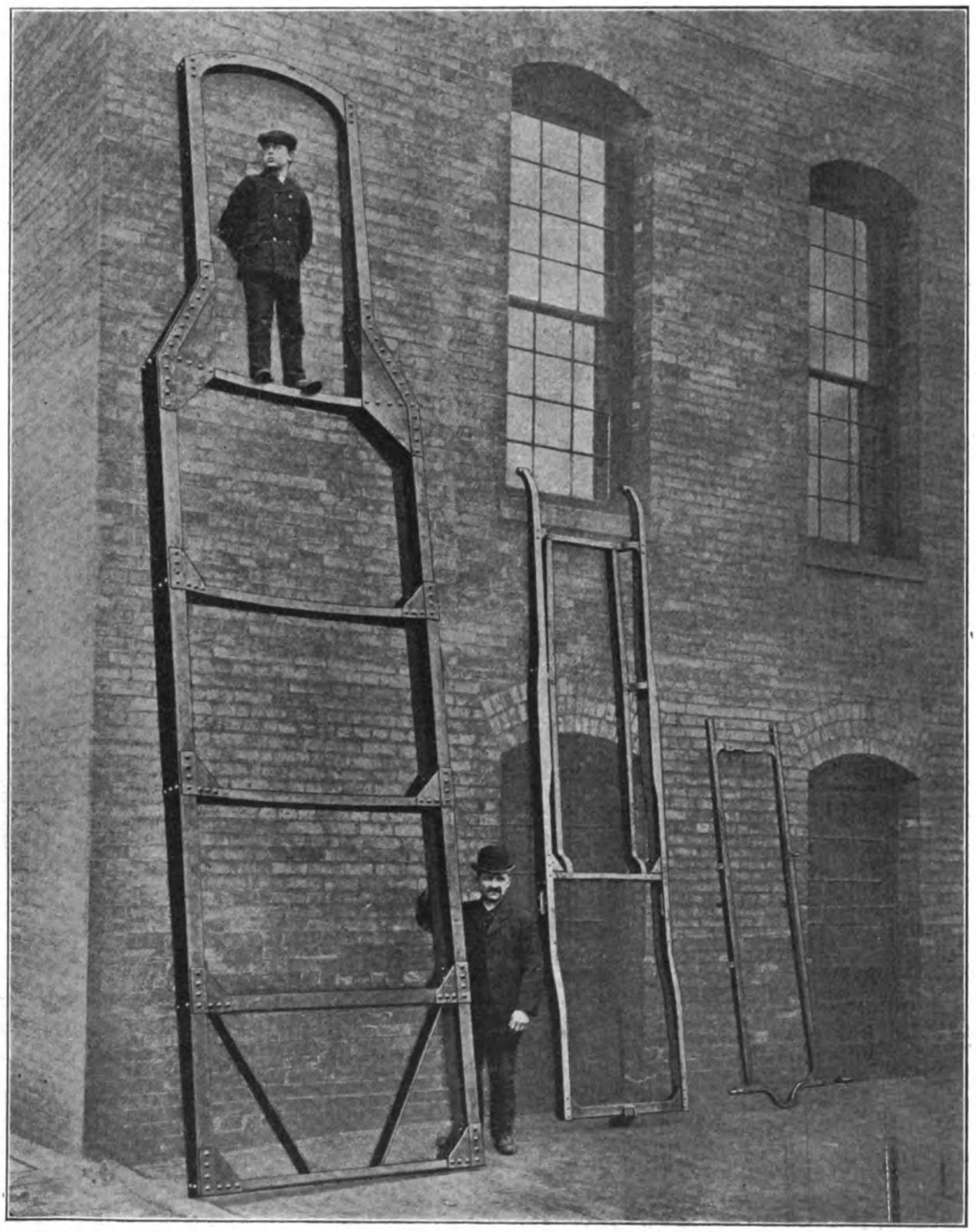
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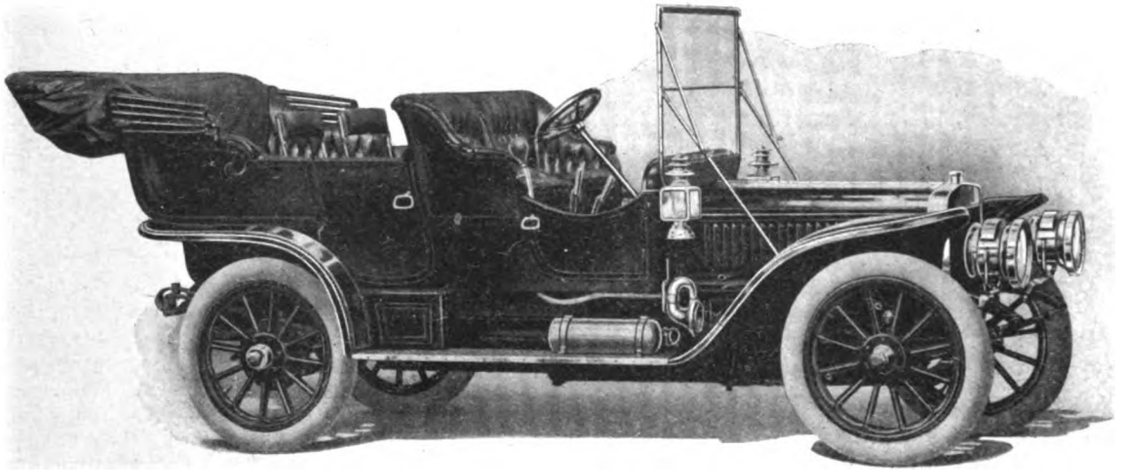
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Haynes	Pope-Hartford	Waltham-Orient
Hewitt	Pope-Toledo.	Walter
Knox	Pope-Tribune	Winton

ELECTRIC

Babcock	Rauch & Lang	Pope-Waverly
Studebaker	General Vehicle Co.	Columbia
Baker	Woods	

STEAM

White

Full Exhibit by The Motor and Accessory Manufacturers Incorporated

FIRST COMPLETE EXHIBIT OF MOTORCYCLES

Unequalled Display of Commercial Vehicles

Admission 50c. Tuesday and Thursday, $1.00

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Locomobile

THE MOST RELIABLE AMERICAN CAR

The New 1908, Type "I" Car 40 H.P.
Four Speeds, Selective;
36-Inch Wheels; 7-Passenger,
$4750. - Top Extra
Other Models $2900. Up.

The *Locomobile* Co. of America, Bridgeport Conn.
A. L. A. M.



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The tire that satisfies

Is it easy to make a good tire?—One that is tough, and yet resilient; absolutely secure, but easily manipulated?

Money, brains, skill and years of experience are required to produce it.

As to the User

For the user but one quality is required—good judgment. Then he will specify

G & J Automobile Tires

They are at once the oldest and the best. If you are particular, insist on G & J Tires.

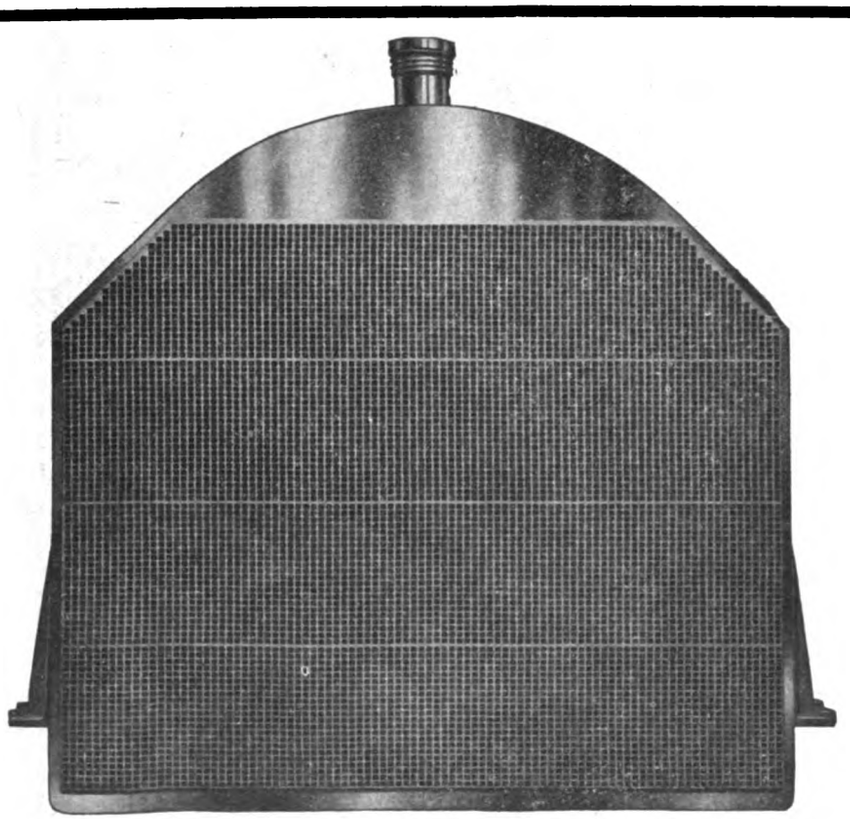
G & J Tires are provided with the oval raised tread or the Midgley anti-skid tread. Either the clincher or Dunlop type may be used interchangeably on the Midgley Universal Rim.

G & J Tire Co.

INDIANAPOLIS, IND.

BRANCHES { Boston—243 Columbus Ave. Detroit—247 Jefferson Ave. New York—10 W. Sixtieth St.
{ Cleveland—New No. 1837 Euclid Ave. Chicago—1434 Michigan Ave. San Francisco—423-433 Golden Gate Ave.

DISTRIBUTING AGENCIES—G & J Tire Agency, Denver, Colo., 1528 Court Place. G & J Tire Agency, Buffalo, N. Y., 912 Main St. G & J Tire Agency, Philadelphia, Pa., 711 N. Broad St. Western Rubber and Supply Co., Los Angeles, Cal., 1010 S. Main St. Omaha Rubber Shoe Co., Omaha, Neb., Eleventh and Farnum Sts. Northwest Auto Supply Co., Spokane, Wash., 1419-27 First Ave. Pittsburgh Rubber Co., Pittsburgh, Pa., 913-915 Liberty Ave. Enterprise Rubber Co., Boston, Mass., Mass., 110 Federal St. Alexander-Alyea Co., Atlanta, Ga., 35 N. Pryor St. Keats & Co., Portland, Ore., 64-66 Sixth St. Plant Bros., Minneapolis, Minn., 21 S. Second St. Central Rubber Co., Chicago, Ill., 84 Lake St. Syracuse Rubber Co., Syracuse, N. Y., 212-214 S. Clinton St. Rochester Rubber Co., Rochester, N. Y., 55 Main St., East. Jerome P. Parker Co., Memphis, Tenn., 181-183 Madison St. Day Rubber Co., St. Louis, Mo.



¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

¶ **The Mayo Radiator** is **The Quality Radiator.**

¶ If you are a **Quality Maker** better write us at once.

HONEYCOMB, CELLULAR OR FLAT TUBE TYPES.

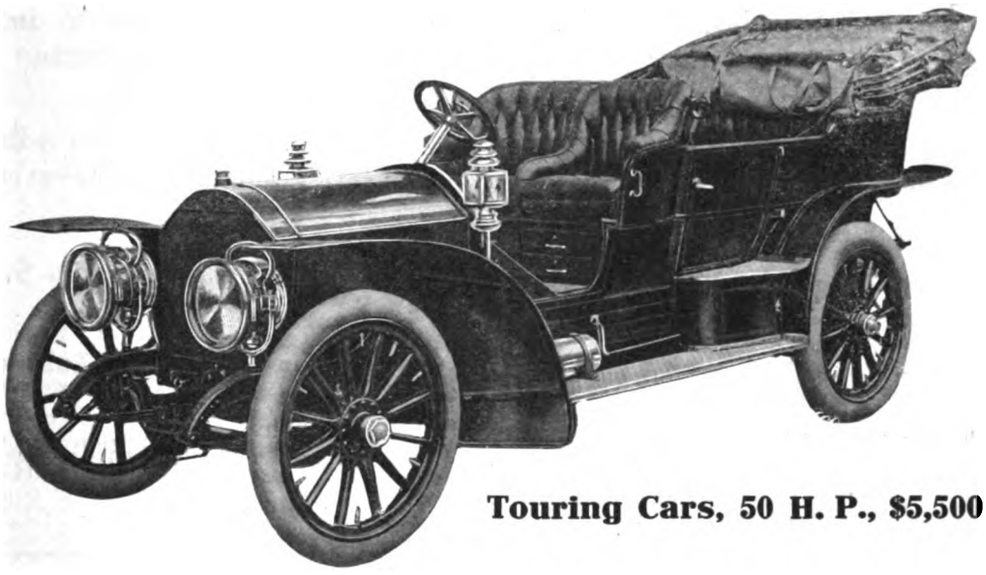
MAYO RADIATOR COMPANY, New Haven, Conn.

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Licensed under Selden Patent

Matheson

Guaranteed One Year

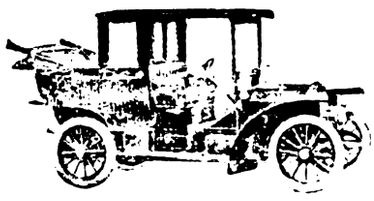


Touring Cars, 50 H. P., $5,500

THE MATHESON is standardized. The few changes for 1908 are unimportant refinements. The great string of Matheson victories during the past season, its new speed records, hill-climbing records, endurance records, its perfect scores galore in reliability contests, made, not only without need of repairs, but without even adjustments, all these have repeatedly proven to us that there is no room for improvement in the Matheson. We have sought in vain for records of performance that would show the need of improvement of even a single feature. Feature for feature through the world's output of high powered cars, there is nothing that can compare with the Matheson for performance over American roads.

This means that the motorist who puchases a Matheson today will have, years hence, a car which will be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. The Matheson is so strong, so swift, so powerful, so simple, so economical, so luxurious, so beautiful, so utterly without a peer, that no use of ink and paper can convey to you its greatness in entirety. Write for our new booklet, "I Drove My Matheson," by Matheson owners, some of whom have driven 5,000 mile trips at an upkeep cost of 5 cents—some for less.

Immediate Deliveries
Limousines, Landaulets
50 H. P., $6,500



Palmer & Singer Mfg. Co.
(Formerly Matheson Co. of New York)
1619 Broadway, New York
Telephone, 4876 Columbus

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"Famous Apperson Cars"

¶ The live, reliable dealer, looking for a good line of well-known, high-grade automobiles, need look no further than space 12, at the Madison Square Garden Show on November 2d to 9th.

¶ All Apperson Cars have back of them fifteen years of actual experience in the manufacture of high-grade automobiles. This means much to discriminating buyers and users.

¶ Dealers in unoccupied territory are invited to call on us.

¶ The Apperson Line includes four fully equipped models selling from $2750 to $5000 each.

Apperson Bros. Automobile Company, **Kokomo, Ind.**
Members A. L. A. M.

SIDNEY B. BOWMAN AUTOMOBILE CO.,
225 W. 49th St., New York, N. Y.
JOSEPH F. GUNTHER CO.,
1240 Michigan Ave., Chicago, Ill.
FRED S. SMITH,
38 Columbus Ave., Boston, Mass.
PHILADELPHIA AUTO COMPANY,
338 North Broad St., Philadelphia, Pa.



EIGHTH ANNUAL

Automobile Show

OF THE

Automobile Club of America

Participated in by the
American Motor Car Manufacturers' Association and the
Motor and Accessory Manufacturers

Grand Central Palace

Lexington Avenue and 43d Street

Thursday, October 24th to 31st, 1907

Greatest Exhibit of American Cars Ever Held

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1908 **1908**

THOMAS

Thomas 4-20 Town Cars

Runabouts, Broughams, Cabriolets, Limousines, Landaulets and Doctor's Cars

$3000 F. O. B. Buffalo

Reliability **Comfort**

Thomas 4-40 Detroit

Runabouts, Tourabouts, Touring Cars and Limousines

$2750 to $3750 F. O. B. Detroit

Thomas 4-60 Flyer

Runabouts, Tourabouts, Touring Cars, Limousines and Landaulets

$4500 to $5200 F. O. B. Buffalo

Reserve Strength **Reserve Power**

Thomas 6-70 Special

Runabouts, Touring Cars, Limousines and Landaulets

$6000 to $6700 F. O. B. Buffalo

CATALOGUE AND SPECIFICATIONS ON REQUEST

E. R. THOMAS MOTOR COMPANY

BUFFALO, N. Y.

Member A. L. A. M.

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I trust that you—whether dealer or prospective motorist—will make special note of

"The Maxwell"

at the Grand Central Palace Show, October 24th to October 31st.

It is still just far enough away to make detailed announcements of models and specifications a trifle premature. But take my word for it—there will be only one car at the Show—the "Maxwell."

There's a big surprise coming off in the "Maxwell" line for 1908. You'll be the first to realize what a stunner it is when the actual announcement comes out.

Don't miss the "Maxwell" ad. just before the Show!

And don't miss the "Maxwell" exhibit at the Show!

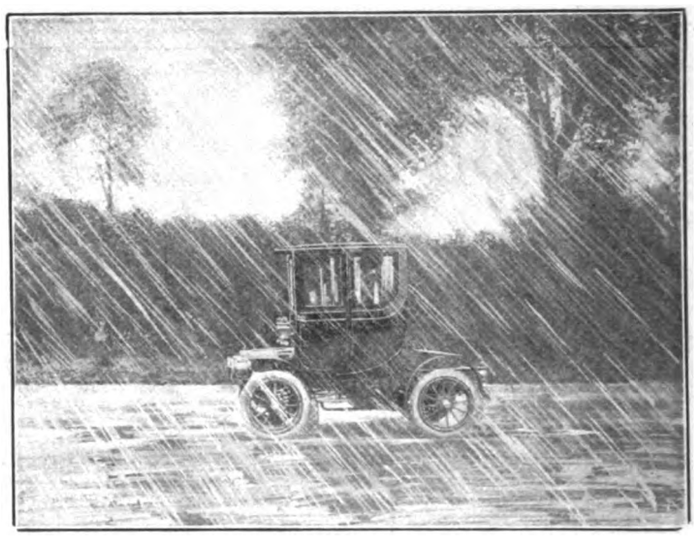
You know the record the "Maxwell" has made; nobody has begun to touch it. And when you see the splendid line of "Maxwell" cars we have on the market for 1908 you will realize in a minute how securely we have blocked all possibility of rivalry either in power, details or price.

Meanwhile, if you want to arrange for a "Maxwell" demonstration at some particular time during the Show week, just drop me a personal note. I'll see to it. If you're a dealer speed spells profit.

Benj. Briscoe

President, Maxwell-Briscoe Motor Co.
Members A. M. C. M. A.

40 Mt. Pleasant Street, Tarrytown, N. Y.
Main Plant: Tarrytown, N. Y.
Factories: Chicago, Ill.; Pawtucket, R. I.
DEALERS IN ALL LARGE CITIES



Rain or shine its all the same in the Cadillac coupe.

$1350 F. O. B. DETROIT

THE IDEAL PHYSICIAN'S CAR.
THE IDEAL SHOPPING CAR.
THE IDEAL OPERA CAR.
THE IDEAL CAR

for any purpose where a two passenger enclosed motor vehicle is desired.

The Cadillac coupe comprises our regular Single Cylinder Chassis with an enclosed body.

It is suitable for every day in the year, warm or cold, rain or shine, for city streets or country roads. In cold or inclement weather the occupant is almost as well housed as he would be at his fireside. In pleasant weather the front and rear windows may be lowered and the side windows opened, permitting ample air circulation.

If desired, the coupe body can be removed and the regular runabout body substituted for use during the summer.

This

Cadillac

with its gasoline motor, has many advantages over cars using other methods of propulsion. There are no noxious odors. You may replenish the tank with gasoline almost any place and be on your way in a few minutes.

The Cadillac coupe is luxuriously upholstered and trimmed and richly finished both inside and out. It has every mark of dignity and refinement, with the pre-eminent Cadillac characteristics of thorough dependability and economy of maintenance.

Cadillac dealers can make prompt delivery.

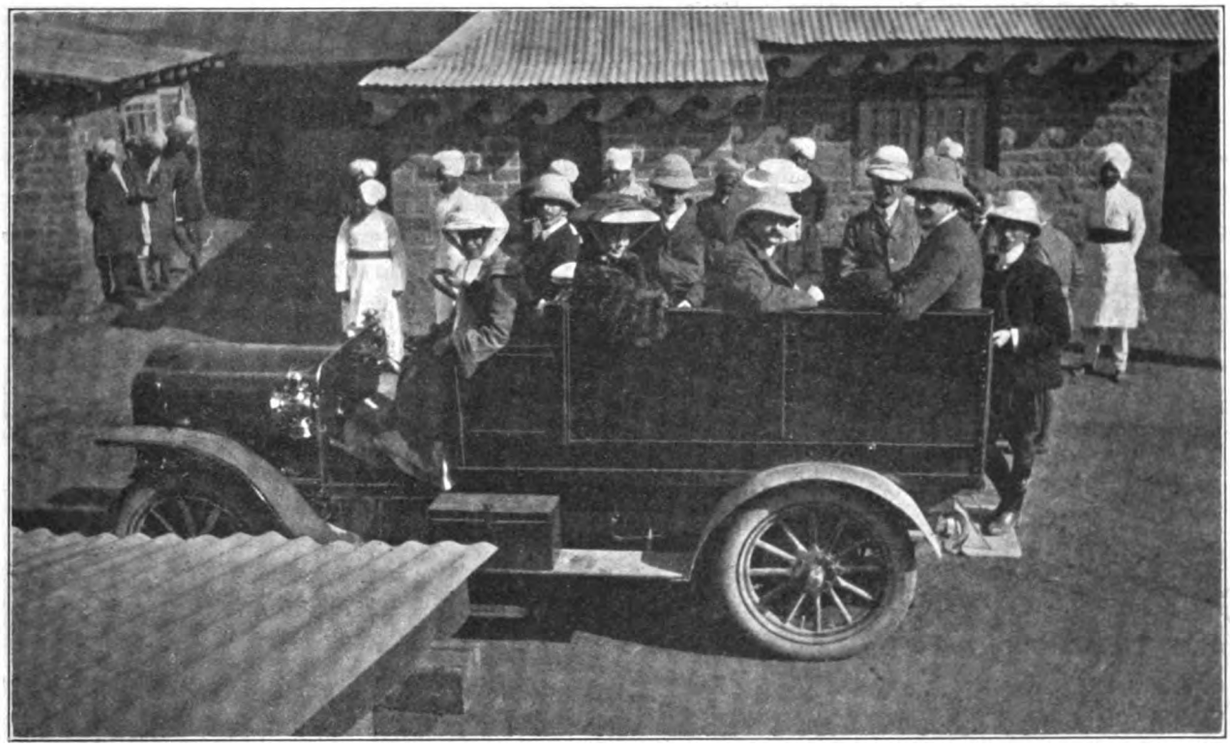
Ask us for Special Coupe Booklet and descriptive catalog.

CADILLAC MOTOR CAR COMPANY, Detroit, Mich.
Members of Ass'n Licensed Auto. Mfrs.

Cadillacs will be exhibited in New York at Madison Square Garden only, Nov. 2-9.

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THE INCOMPARABLE
WHITE
THE CAR FOR SERVICE



A SEASON OF WHITE VICTORIES

White Bulletin No. 14, which has just been issued, gives a resumé of the victories of the White in the important contests of the year. The various chapters of the Bulletin bear the following headings:

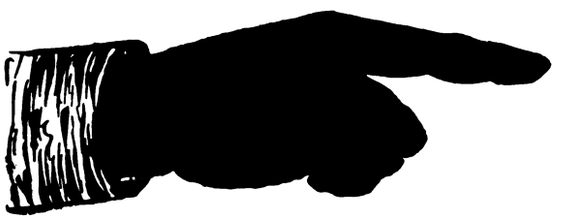
The White in World-Wide Use
The President at the Wheel
Continued Government Favor
First Place in London Town Carriage Contest
Perfect Score in Harrisburg Endurance Run
Fastest Time in Wilkes-Barre Hill-Climb
Fastest Time in Cleveland Hill-Climb
Fastest Time in California Hill-Climb
Perfect Scores in Sealed Bonnet Contest
Officially Observed Non-Stop Run of 1871 Miles
Only Perfect Score in Quaker City Regularity Run
Fastest Time of the Season on the Track
Perfect Score in California Endurance Run
Officially Declared Most Efficient Car
Wins Third "Desirability Contest"
The Glidden Tour—A Clean Sweep for the White

Write for a copy of this interesting publication.

THE WHITE COMPANY
CLEVELAND, OHIO

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The ad on the opposite page
states a plain truth about the success of Morgan & Wright Tires



The Anti-Fatigue Car

It never grows weary of well doing. All are beginning now to realize what the users of it and its builders always have known—that the

American Locomotive Motor Car

is the "greatest touring car in the world, bar none." Tourists boast that with this machine they can always keep their schedule and those who have driven it farthest, say:

"IT STAYS NEW"

Imported Materials. American Workmanship.

Vanadium, "the anti-fatigue metal," is in ALL its steel and iron.
What lasts best, *is* best.

The energies and backing of a $50,000,000 company are behind it.

AMERICAN LOCOMOTIVE AUTOMOBILE COMPANY
1886 BROADWAY, NEW YORK **Factory, Providence, R. I.**

PARK SQ. AUTO STATION, Boston
AMERICAN LOCOMOTIVE AUTOMOBILE AGENCY, Pittsburg
W. W. SHAW CO., Chicago

To keep posted, read
THE MOTOR WORLD

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MORGAN & WRIGHT TIRES have won a commanding place in the tire field thru persistent making good

Branches and Agencies

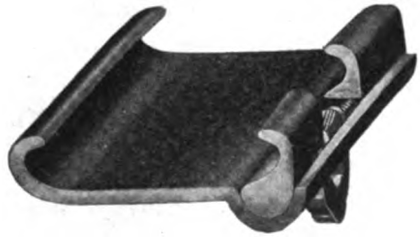
New York: 214 W. 47th St., 17 Warren St.
Chicago: 81 Michigan Ave.
Boston: Motor Mart.
Syracuse: 214 Clinton St.
Buffalo: 379-383 Washington St.
Rochester: 55 Main St. E.
Pittsburg: 913-915 Liberty Ave.
Philadelphia: 13th & Cherry Sts.
Cleveland: 1829 Euclid Ave.
Dayton: 405-411 East Third St.
Minneapolis: 708 Hennepin Ave.
Atlanta: 90 No. Pryor St.
St. Louis: 538 N. Vandeventer Ave.
Kansas City: 605-607 E. 15th St.
Denver: 1562 Broadway.
Los Angeles: 118-122 E. Tenth St.
San Francisco: 423-433 Golden Gate Ave.
Portland: 86 Sixth St.
Seattle; Ninth Ave. and Pike St.

We want to emphasize that word "won."

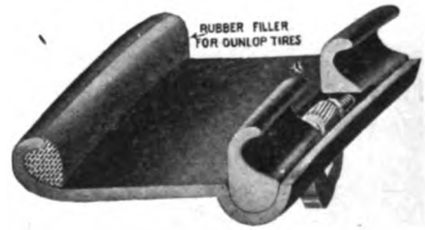
It requires an entirely different kind of a tire to win business than it does to secure it. It is one thing to sell a motorist one set of tires, but it is quite another—and a bigger—thing to sell him a second set of the same kind. Salesmanship may sell the first set, but merit must sell the second.

And it is by this merit method that MORGAN & WRIGHT TIRES have won their way to prominence in the "auto game."

Tough rubber stock, superior-grade fabric, our method of tire building, and perfect vulcanization—this is the "compound" that makes up into GOOD tires.



FOR CLINCHER

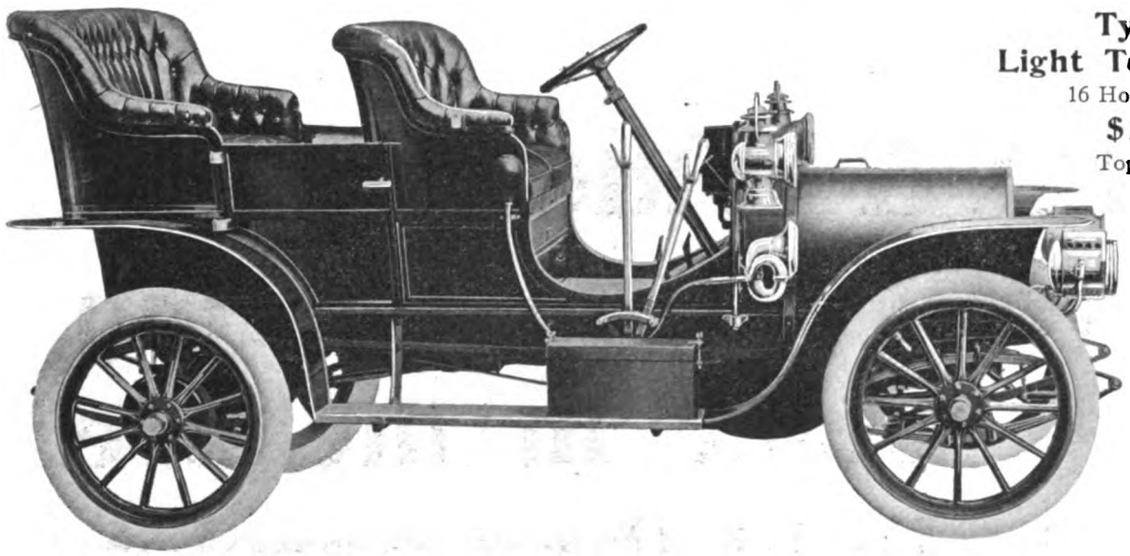


FOR DUNLOP
(Note rubber filler in clincher on left.)

The Improved Midgley Rim, illustrated above, accomodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.

MORGAN & WRIGHT, DETROIT

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Type G
Light Touring Car
16 Horse Power
$1850
Top extra.

Type G fills a niche all its own

Handy, speedy, able, economical, all at once—Franklin Type G (Touring Car or Runabout) is the most useful automobile ever built.

The wonderful new Franklin concentric valve and the other latest Franklin refinements give Type G 16 horse power which means more real working ability than goes with that rating in any motor car but a Franklin.

With all this power the G is snug in size and proportions, light weight, and manageable.

You can't overheat this Type G. It is a perfect example of Franklin air-cooling—doesn't even need a fan. And of course you never can freeze it.

The touring car is the ideal family automobile for city and suburban use. And the Runabout—swift, flexible and always ready—is the best adapted business Runabout there is.

Type G has the perfect strength that comes of highest-grade materials and scientific construction. It has the economy of light weight; the efficiency that won the Automobile Club of America's great two-gallon contest; the ability that holds the world's long-distance record across America; and has just created the wonderful new record from Chicago to New York in 39 hours 53 minutes.

As for style and appearance Type G is a motor car to be proud of.

Never was so much general utility built into a motor car before.

16 H. P. Touring Car $1850
16 H. P. Runabout $1750
28 H. P. Touring Car or Runabout $2850
42 H. P. Touring Car or Runabout $4000

PRICES F. O. B. SYRACUSE

Write for the best Automobile catalogue ever printed.

H. H. FRANKLIN MFG. COMPANY, Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers.

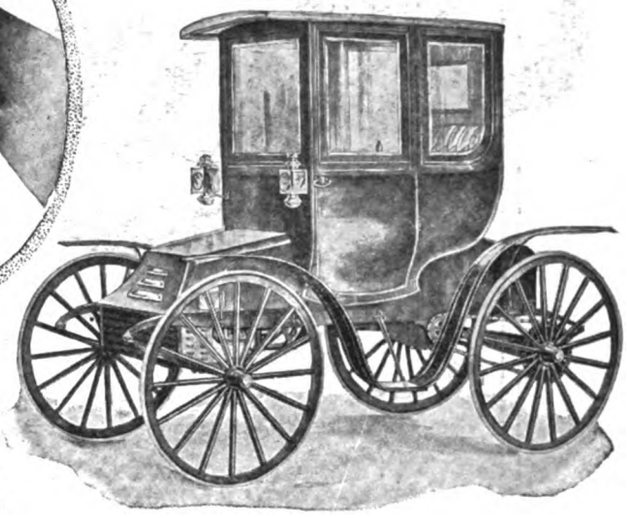
Franklin

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"The First Real Successor to the Horse"







1908

RELIABLE DAYTON

A Motor Car which adds to the reliability of the horse the luxury of speed; embraces the acknowledged standards of motor car construction combined with the road clearance of a carriage. The 1908 models include many features new to the carriage type of motor car.

Fifteen horse-power motor under the hood at the front; shaft drive to counter shaft; double chain drive to the rear wheels; sliding gear transmission; two speeds forward and reverse; transmission, bevel gears and differential together in one piece aluminum casting; wood frame of ash amply reinforced; rack and pinion steering device; no ropes, belts or pulleys.

RELIABLE DAYTON cars present the first practical solution of the motor car problem from both the standpoint of efficiency and economy. Tire troubles are abolished, tire maintenance reduced to the minimum.

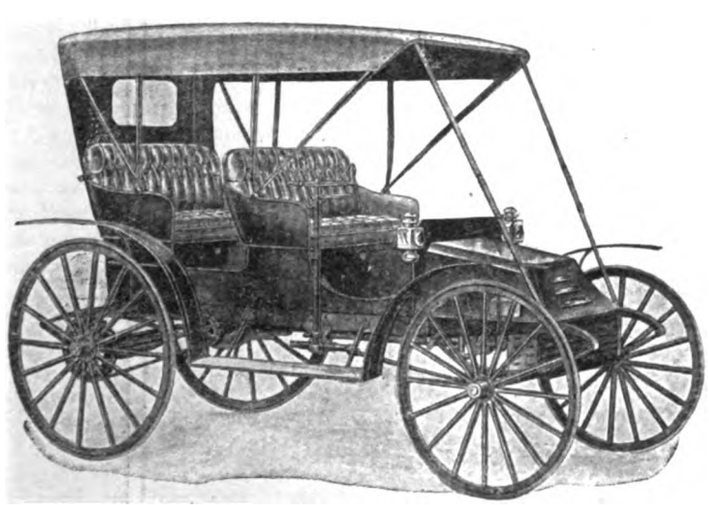
Low in first cost; lowest in depreciation and longest in service—the car for the man who wants mileage for his money.

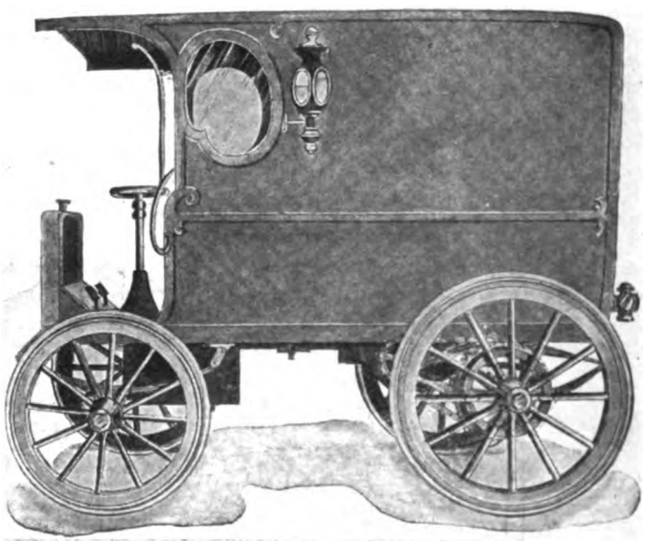
Four 1908 models as here illustrated. Descriptive catalog with full specifications on request.

New York Automobile Show, October 24-31. Chicago Automobile Show, November 30-December 7.

RELIABLE DAYTON MOTOR CAR COMPANY

Dept. 14. CHICAGO, ILL





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Rambler
Automobiles

For the year 1908 the entire facilities of the Rambler factory will be devoted to the production of two Models, 34 and 31.

Model 34, a five-passenger touring car with four-cylinder vertical motor, 32 horse power, has selective type transmission with shaft drive. The wheel base is 112 in., wheels 36 in., with 4-in. tires. Price, fully equipped, $2,250. The same chassis, however, with appropriate changes in detail, will be equipped with a roadster body with rumble seat, at the same price.

Model 31 is a five-passenger touring car with detachable tonneau, equipped with the Rambler unit power plant, comprising double opposed motor, multiple disc clutch and planetary transmission entirely enclosed. Price, fully equipped, $1,400. This model can be furnished with torpedo deck in lieu of the tonneau, at $1,300.

Both models have been brought to the highest possible degree of perfection in every detail that insures

Service, Economy and Comfort

A complete line of 1908 Ramblers will be shown at a private exhibit at the salesrooms of the Homan & Schulz Company, 38-40 West 62d Street, New York City, during both New York Automobile Shows.

You cannot afford to miss making a critical inspection of these 1908 models of

The Car of Steady Service.

Advance catalog now ready; write for a copy to-day.

Thomas B. Jeffery & Company

Main Office and Factory: Kenosha, Wis.

BRANCHES AND DISTRIBUTING AGENCIES: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.
Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, October 10, 1907. No. 2

IMPORTERS' SHOW ALL RIGHT

Denials of Rumors of Its Abandonment—Manager Mabley Says He Holds Final and Binding Contracts.

During the past few days, whispers, which had been in restricted circulation for all of six weeks, to the effect that the importers' show would be abandoned, have attained such strength as to become well defined rumors and the rumors have spread so rapidly that they have compelled notice.

But despite the discomfiting reports, some of which are almost cocksure, Carleton R. Mabley, manager of the Importers Salon, Inc., which has the project under its wing, poopoohs even the suggestion that the show may be abandoned. He stoutly affirms that it will be held in Madison Square Garden and on the dates, December 28 to January 4, originally selected.

"It's news to me," he declared, "that any such rumor should be around, because we are making every preparation. In fact we think it is going to be a show that will make the other shows look to their laurels."

J. C. Young, secretary of the Madison Square Garden Co., when asked as to whether there was any uncertainty of the show being held, said: "So far as I know it will be held at the time indicated. There are plenty of signed contracts in hand, and I believe there will be no difficulty in the financing of the affair."

A Broadway importer, when asked as to whether there had been any talk of dropping the show, said that he had heard nothing tangible to that effect. His firm, together with some others, had not as yet definitely taken space, feeling that there was plenty of time to do so later if it appeared desirable, but that the general assumption was that the show would be held.

Apparently, some of the whispers sprang from the fact that when the show first was arranged, the intending exhibitors were held only by conditional contracts, but Mr. Mabley stated that as the conditions imposed had been fulfilled, final and binding contracts since had been executed and were in his possession.

Aerocar to Reorganize and Resume.

C. A. Benjamin, general manager of the Aerocar Co., of Detroit, has not left the latter concern to go with the Ford Motor Co., as was announced by a hasty correspondent with an eye to inferences. Benjamin himself was in New York this week and so stated. The plant of the Aerocar Co. having recently been sold under a receiver, it is understood that the real purchaser, Alex. Malcolmson, who was the moving spirit in the original company, and several other men of wide repute, will reorganize the business, probably giving it a new name, and that Benjamin will have an opportunity to repeat the good work he did for the Aerocar Co. before internal dissension among the stockholders precipitated it into the receiver's hands.

Charley and Mercedes are Out.

Cables from Paris report that C. L. Charley, who practically was the sales agent for the Mercedes output, has severed all connection with the Mercedes interests. What may be his plans for the future is not made known. Charley, who was well known in America, is said to have cleaned up a million or more and is in position to "take things easy." His rise from a promotor of bicycle races to a position of affluence was rapid and as surprising as it was swift.

Shoemaker Removes to Elkhart.

Henceforth the address of the Shoemaker Automobile Co. will be Elkhart, Ind., instead of Freeport, Ill. The company has accepted the offer of the Indiana city and its machinery and other effects are now being removed to Elkhart and will be installed there within the next week. The Elkhart people supplied a factory building and $40,000 in cash in order to induce Shoemaker to become one of them.

LEAD THAT SANK SMUTZEL, INC.

Remarkable Cause of Failure of an Accessory Importer—Now He Will Sell the Complete Car.

Paul L. Snutzel, Inc., the New York importer of accessories, who "went broke" about a month since, has filed schedules showing liabilities of $10,606; his nominal assets are $4,040 and nominal assets have a bad habit of shrinking greatly in the wash.

Snutzel, however states that he will pay 100 cents on the dollar. Of his nominal assets, $2,207 is represented by stock, $750 by fixtures, $1,045 by accounts, and $47 and no cents by real money. The largest creditors are Mestre & Blatget, of Paris, to whom is due $3,419.

Snutzel went into the business of importing accessories only about a year since and his failure is remarkable only because of the unusual reason he giver. He says:

"The direct cause of the trouble was wholesale theft on the part of certain of our employees who abstracted spark plugs from packages and substituted pieces of lead. One customer in San Francisco notified us that he had received more than 300 chunks of lead in one shipment, and wired to ask if it was a practical joke. The total losses amounted to several thousand dollars, and on account of this fact and poor collections the concern decided to wind up its accessory business."

So far as is known, no arrests were made because of the thefts and Snutzel himself has found the failure small cause for embarrassment. He has given out that he has secured the American agency for a Belgian car and that he will sail next week to complete the details of the arrangement and to hurry shipments.

The receivers of the Grout Brothers Automobile Co. are offering for sale the plant and equipment at Orange, Mass. They first are inviting private bids.

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The Week's Incorporations.

Chicago, Ill.—Weber Gas Engine Co., under Missouri laws, with $150,000 capital; to manufacture gas and gasolene engines, automobiles and motors.

Trenton, N. J.—Home Tire Co., under New Jersey laws, with $25,000 capital; to make automobile tires, inner tubes, etc. Corporators—E. W. Moore, Jr., H. Klag, Jr., C. A. Comp, Trenton.

New York City, N. Y.—Coomber Tire and Rubber Co., The, under New York laws, with $25,000 capital. Corporators—J. J. Coomber, R. Rowley, New York City; W. H. Caffrey, Brooklyn.

Lima, Ohio—Lima Automobile Co., under Ohio laws, with $30,000 capital. Corporators—D. C. Dunn, president; James E. Duffield, vice-president; Ralph L. DeVoe, secretary; O. L. DeWeese, treasurer.

Rockford, Ill.—Rockford Automobile and Engine Co., under Illinois laws, with $50,000 capital; to manufacture automobiles, engines and machinery. Corporators—A. G. Paralee, J. F. Walters, Adam Ziska, Jr., F. A. Schlick, Rockford.

New York City, N. Y.—Motor Rolling Chair Co., under New York laws, with $100,000 capital. Corporators—John A. Wilbur, 279 Pearl street, New York; Charles D. Montague, 23 Waldorf court, and Whitmel, 215 Montague street, Brooklyn.

New York City, N. Y.—Auto Fly Mfg. Co., under New York laws, with $100,000 capital. Corporators—Dr. Albert Chambers, Coney Island; George Jean, Essex street and Pitkins avenue, and William Timm, Linwood street and Sutter avenue, Brooklyn.

New York City, N. Y.—New York Auto Lamp Co., under New York laws, with $5,000 capital. Corporators—Frank J. McCloskey, 20 Broad street; Louis Marchesini, 585 Washington street, and Saerio Colantti, 306 East Twenty-eighth street, New York City.

San Diego, Cal.—Great Western Motor Co., under California laws, with $200,000; to manufacture and deal in all kinds of automobiles, machinery, engines, etc. Corporators—C. L. Brimhall, W. H. Hunt, C. E. Hunt, I. C. Brimhall, and Fred O'Farrell, all of San Diego.

St. Louis, Mo.—Moon Motor Car Co., under Missouri laws, with $175,000 capital, 75 per cent. paid; to do a general automobile business. Corporators—Joseph W. Moon, Stewart McDonald, Alfred F. Moberly, George H. Schelp, Henry C. Hopkins, and Louis F. Whitlock.

Looks Like Show War in Detroit.

E. Le Roy Pelletier, advertising manager of the Ford Motor Co., has been selected by the show committee of the Detroit Automobile Dealers' Association to manage their exhibition, to be held at Wolf's Auditorium, during the week beginning December 9. It is assurance that the function will not lack intelligent publicity.

Pelletier, who once was press agent for Thompson & Dundy, has been given carte blanche to carry out his own ideas, regardless of cost, and he promises something exceptionally artistic in the way of decorative and lighting effects. It is added that already dealers representing 53 different makes of automobiles have signed an agreement to not only exhibit at this show but also that they will not participate in any other, so it is very evident that there will be a conflict, "as it is expected that the managers of the former shows will run a sporting goods and accessories exhibit, as heretofore, particularly as the automobile dealers will not allow any accessories in their show," to quote Pelletier's first and two-edged announcement. As a matter of fact "the managers of the former shows" already have scheduled their "Tri-State Automobile and Sportsmen's Show" for February 10-15 and have again leased the Light Guards Armony for the purpose.

To Build Cars in California.

With a capitalization of $200,000 the Great Western Motor Co. of San Diego, has been incorporated under California laws and has acquired a two-story brick building—a former carriage factory—at Twenty-fourth street and National avenue in which will be built a car employing a two-cycle motor. The motor is the invention of C. L. Brimhall and W. H. and C. E. Hunt, who with I. C. Brimhall and Fred O'Farrell, all of San Diego, constitute the corporators of the company.

More Motor Buggies in Prospect.

John F. Waters, previously an official of the Federal Automobile Co., of Chicago, has connected with Rockford, Ill., capital and formed the Rockford Automobile & Engine Co., with capital stock of $50,000. Manufacturing facilities have been secured in the Talcott building. The vehicle to be produced will be of the solid tired, motor buggy type, which will be styled the "Rockford."

Hawley Company Elects Officers.

Officers were elected by the Hawley Automobile Co., Ltd., Constantine, Mich., last week as follows: President, W. L. White; secretary, W. M. Spencer; treasurer, S. B. Hagenbuch; directors, the officers, E. S. Hotchin, James Embley, H. W. Pidgeon and Dr. E. P. Bartlow.

Hillsdale Proud of Its Firstborn.

Hillsdale, Mich., is proud. The machine shop of Reek Bros. has produced its first "auto" and on its initial run it "showed up well." It is a single cylinder runabout of 15 horsepower, which it is intended to market at $450.

In the Retail World.

L. J. Sackett, latterly with the Simplex Automobile Co., has engaged with the Allen-Kingston Motor Car Co.; he will represent them on the road.

E. L. Nock Automobile Co., Providence, R. I., will build a new garage on Broad street, near Potter avenue. It will be one story, of brick; the dimensions are 101x52 feet.

G. T. Pushman has purchased the lot on Michigan avenue, near Twenty-fifth street, Chicago, and will build thereon a three-story brick garage. The lot measures 50x161 feet.

The Kohlhuss Motor and Parts Co. is the style of a new concern which has "opened up" as manufacturers agents at 1918 Euclid avenue, Cleveland, Ohio. Fred W. Kohl is its manager.

Isaac Shuler has moved into his new garage on Court street, Bowling Green, Ohio. The addition of a large passenger car for pleasure parties is a feature for Bowling Green convenience.

The Packard Motor Car Co., Providence, R. I., has leased the property at Washington street and Exchange place, and will open a new garage and salesrooms. It will be ready about December 1st.

The Dingle-Wetherbee Co., automobile dealers and repairers at 177 Berkeley street, Boston, Mass., has made an assignment for the benefit of its creditors. Robert A. Jordan and John T. Eno were named as assignees.

John G. Craig, treasurer of Wyckoff, Church & Partridge, New York, died at his home in New York on Friday last, 4th inst. He was 56 years of age and had been identified with the automobile business for about five years, having been the organizer of the Standard Automobile Co.

R. G. Howell, who previously was identified with Wyckoff, Church & Partridge, has formed the R. G. Howell Co., with himself as president and manager, and J. Z. Baten as treasurer. He has obtained the agency for the Northern car and will set up at 1657 Broadway, New York.

Frank L. Wirick, A. T. Bennett and Ralph Bennett have formed the Wirick-Bennett Automobile Company at Sioux City, Iowa, and will erect a large garage at Fourth and Nebraska streets. It will be two stories, of brick, 50x150 feet. Besides representing six makes of cars the company will conduct a livery and operate a line of sight-seeing wagons.

Alleging preferences and a confession of insolvency, three creditors have filed a petition in bankruptcy against C. A. Tileston & Co., Inc., who have been engaged in the retail business at 1776 Broadway, New York. The petitioning creditors and the amounts of their claims are Brewster & Co., $2,855; Norris N. Mason, $256, and the Atlantic Motor Car Co., $66.

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AUGUST ANOTHER MONTH OF CHEER

Continued Gain in Export Trade—France Leads in Increasing Purchases—British Australasia a Close Second.

Foreign trading in American automobiles and parts continues to increase at the hopeful rate. The August returns from the Bureau of Statistics at Washington, emphasize the fact to a noticeable degree, no less than nine of the fourteen geographical groups recognized, revealing an upward tendency during the month reported. In these, the West Indies and Bermuda take the lead with an increase of $44,213 over the returns for August, 1906. France, with a gain of $30,135, and British Australasia with $29,513 following, with South America, Other Europe and the United Kingdom succeeding in order of difference.

In all, 256 cars were exported during the month, 28 more than during August, 1906, the average declared value per car being something like $1,300 less this year than last. The total gain in cars and parts together amounted to approximately $39,400.

Mexico, Other Asia and Oceania, and British North America reveal significant depreciations, amounting in round numbers to $69,000, $16,500 and $14,000, respectively. Italy and Africa also, figure in this class, to a small extent.

The summarized returns are misleading in that those quoted for 1906 are for six months, while those for the current year, are for the eight months, ending August 31st. Judging from the returns already published from month to month, however, it is safe to place the notable increases in business with the United Kingdom, British North America, and South America. The totals show an apparent gain for the eight months of $1,415,592, as compared with the first six months of 1906, and an actual increase for the eight months of $2,710,878, as compared with the corresponding period of 1905. The report in detail follows:

	August		Eight Months Ending August		
	1906	1907	1905	1906	1907
Automobiles, and parts of.....	.....	.....	$2,041,134	†$2,356,110	.....
Automobiles*	$421,220	437,468	.....	906,892	$4,263,437
Parts of	45,911	69,054	.....	73,418	488,575
Exported to—					
United Kingdom	122,630	129,300	535,391	952,543	1,464,470
France	15,250	45,385	238,005	271,286	528,253
Germany	7,569	8,093	90,543	107,675	152,936
Italy	1,125	436	145,754	234,997	241,536
Other Europe	7,280	18,011	199,949	171,255	251,245
British North America	150,210	135,905	436,643	656,343	1,036,291
Mexico	103,498	34,488	114,737	484,865	487,099
West Indies and Bermuda	12,159	56,372	96,577	201,441	209,722
South America	12,093	25,050	38,120	84,409	153,540
British East Indies	2,228	7,239	22,838	23,545	26,963
British Australasia	11,124	40,637	49,883	87,957	135,492
Other Asia and Oceania	20,099	3,656	45,545	44,535	49,484
Africa	209	25	25,391	9,831	6,051
Other countries	1,657	1,925	1,758	5,738	8,930
Total automobiles, and parts of..	$467,131	$506,522	$2,041,134	$3,336,420	$4,752,012

† Figures are for six months, January to June, 1906.
* Number not stated prior to July 1, 1906.

"Special Nights" at Palace Show.

Special nights for special classes that are interested in the development of the motor car industry will be a feature of the Grand Central Palace show, New York, October 24 to 31.

Following the private view of A. C. A. members on Thursday afternoon, October 24, the opening day, there will be what is known as "Merchants Night" on Friday, October 25, when the prominent merchants of New York and vicinity together with the heads of their delivery departments will be invited to attend and view the machines exhibited, particularly those of the commercial type in which they are vitally interested. Saturday night, October 26, will be known as "City Officials' Night," when invitations will be extended to all heads of departments in New York City to view the cars in their autumnal setting. Monday night, October 28, will be known as "Engineer's Night," when the members of the principal engineering clubs, societies and associations will be asked to visit the show. Invitations will be extended to the Engineer's Club, the Society of Automobile Engineers, the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, the New York Electrical Society, and last, but not least, to the members of the Mechanical Branch of the Association of Licensed Automobile Manufacturers, the technical sharps of the rival show which will be held the week following the Automobile Club show. Tuesday night, October 29, will be "Society Night," while Wednesday night, October 30, will be known as "Military Night," when the heads of the Army and Navy and National Guard will be the guests of the Club.

Invitations have been issued to these special classes and acceptances thus far received indicate a record attendance.

J. D. Porter has been appointed sales manager of the Wayne Automobile Co. Porter for a long time has been connected with the automobile press, which is to say that he knows the trade intimately and well.

REEVES ATTACKS "SEASON" SYSTEM

Folly of Putting a Year Tag on Models Shown up—How and Why It Hurts Business.

For the first time the question of giving yearly designations to motor cars, a subject which was treated rather fully in a recent Motor World editorial, has been given something of the discussion it merits at the hands of the trade. It remained for Alfred Reeves, general manager of the American Motor Car Manufacturers' Association, to "speak right out in meeting." The meeting, to be sure, was a very informal affair, being a luncheon to the New York representatives of the exhibitors at both shows by an hostelry seeking show time patronage, but it provoked some lively and illuminating views on the trade side of branding models by years or seasons.

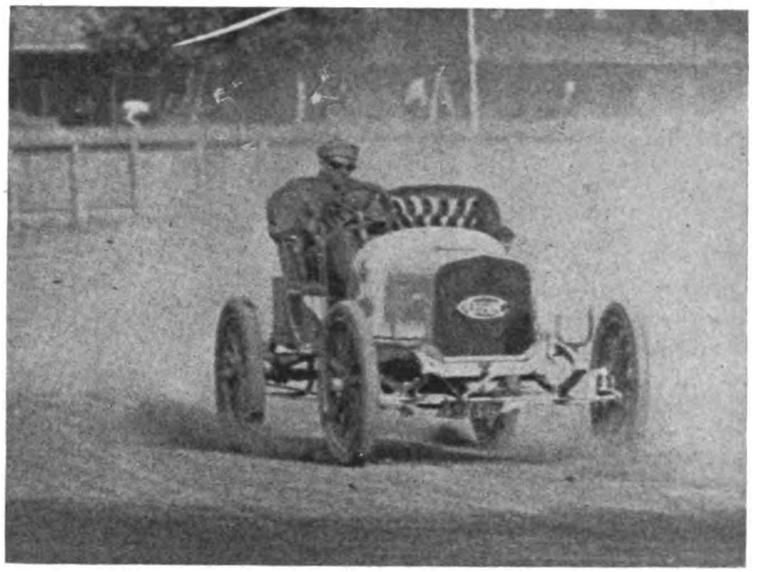
After John T. Cutting had declared the shows this year were altogether too early, so early in fact as to directly interfere with agents' fall business and greatly to lessen the number of cars being sold, and some other New York retailers had given expression to their sentiments about nullifying the usual fall selling season by keeping the public in suspense concerning much heralded "1908" models at close hand, Reeves pronounced upon the growing absurdity of the general practice of manufacturers in fixing calendar dates on which to call all their previous products passé and out of date.

"At a time when the industry was very new," said Reeves, "it was a good thing to get up enthusiasm and interest by flashing a new and improved model for each year, but conditions have so changed and automobiles are so standardized that such a policy has not the justification or reason that it once had. No radical changes in automobile construction are now promised from year to year and any system which puts a stigma on machines created before a certain hour and minute, without regard to their merit or construction, is unfair both to the dealers who handle them and the people who own them. It is well enough to hold shows periodically for the manufacturers and the dealers to get together at one time and make re-arrangements of agencies and the like, but to emphasize the models by years or seasons is both unnecessary and unwise. As a matter of fact, the majority of the manufacturers will continue to make cars identical with those that have proved successful this year, with only slight changes in detail or refinement, yet many people will be deterred from buying during the present fall touring season, because they will want to wait for the so-called new models. Really new models are rare, and seldom coincide with the New Year."

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"Working in flawless fashion throughout the distance, the (Corbin) car finished the race in 1 hour, 2 minutes, 14⅘ seconds, which is a new 50-mile record for the Readville track."—*Boston Post*, September 15, 1907.

THE FULL-JEWELED CORBIN MOTOR CARS



THE FULL-JEWELED CORBIN MOTOR CARS

THE CORBIN MOTOR VEHICLE COPORATION, New Britain, Connecticut

Member Association Licensed Automobile Manufacturers.

A National PROPHECY FULFILLED

In the Fall of 1905, when we brought out the First Stock Six Cylinder Car Made in America

we stated in our advertising

THAT IT WAS "An Innovation in Touring Cars"
THAT IT WAS "A car very much ahead of the times"
THAT IT WAS "A car which would be extensively copied in the near future"

Note the number of manufacturers who are NOW building six cylinder cars.



Limousine bodies for National Models E, H and L ready for Immediate Delivery

THE 1908 NATIONAL LINE

Model T,
6 cyl. 75 H. P.
Touring car.
Limousine.

Model R,
6 cyl. 50 H. P.
Touring car.
Limousine.
Roadster.

Model N
4 cyl. 50 H. P.
Touring car.
Limousine.
Roadster.

At the New York Show, Grand Central Palace, Oct. 24 to 31.

Write for Catalogue and Booklet "WHAT OWNERS SAY ABOUT THEIR NATIONALS"

NATIONAL MOTOR VEHICLE CO.
1007 E. 22d Street, Indianapolis, Ind.
Member American Motor Car Mfrs. Ass'n, N. Y.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, OCTOBER 10, 1907

The Motor World's Show Numbers will bear dates October 24th and 31st and November 7th.

Show Situations, National and Local.

Although the early shows were designed for the benefit of the manufacturers, reports from those in position to know state that not a few of the intending exhibitors apparently have failed to realize the fact and are in an alarming state of unpreparedness. This is to say that their new models are so far from completion that some very hasty or strenuous work will be necessary if they are to be staged at the national exhibitions. In some quarters there exists undisguised apprehension that old models may outnumber the new ones. The matter also entails the point which the Motor World has made on previous occasions, i. e., that, once purposeful, the designation of cars by the years of their manufacture now is a drawback and serves to make the automobile business a "season business." Like the shows themselves, the practice leads the public to expect a new model each year and purchases are delayed or lost in consequence, and old stock thus is accumulated and ultimately sacrificed.

A situation of the sort was not wholly to have been unexpected. "Forcing the season" always is attended with difficulty and it well may be doubted that it serves any really permanent or far-reaching purposes. However desirable may be an early show of parts and fittings, it is reasonably certain that whatever advantages an early exhibition of completed cars may hold for the manufacturers, it is extremely probable that they will prove to be advantages gained at the expense of the retail trade, in other words, it is likely to further shorten a selling season already too short.

The most astonishing feature of the whole situation is the manner in which the promoters of local exhibitions have played "follow the leader" and succumbed to the early show fever. How an exhibit displayed in November or December can prove of any real benefit to the retail trade is beyond our understanding at any rate. Local shows are supposed to be for the purpose of awakening local enthusiasm to the point of increasing local sales, and how a function held when the snow is on the ground and likely to stay there for three months, and when most people prefer to hug their firesides can materially serve that end is difficult to comprehend. Any enthusiasm aroused by such a function is more than likely to dissipate in thin air long before the roads have "thawed out" and the air has lost its sharp bite. About the only persons who will purchase at an early local show are those who would purchase any way; they merely will then place their orders to insure early deliveries, which will make January, February and March appear very much duller than has been the case. The influence of approaching spring weather, which is the chief influence that serves to create new buyers and that is stimulated by and makes local shows worth while, will be almost wholly lost.

With the truth so very obvious, how any collection of hard-headed dealers can bring themselves to the contrary state of mind is impossible to decipher. Early local shows are merely mortgages on the present at the expense of the future, and not very desirable mortgages either. It is not too late for promoters of such affairs to turn back and if they are wise they will lose no time in doing so. Nothing is to be gained by painting rainbows or by chasing them.

Development of the Town Car.

It is in the nature of a happy augury that some attention finally is being turned toward the development of the so-called town car. Of course, such cars long have existed in the electric types but only a stretch of courtesy will permit the term to be applied to any of the existing gasolene vehicles.

If a stray coupe or two be excepted, the runabout with the buggy top and rain apron is the nearest approach to anything of the sort and it is not very much better than a makeshift. The person who would purchase a closed or semi-closed or convertible car has had practically only a Hobson choice—a limousine or nothing; and limousines necessarily are big, heavy, powerful and expensive. The limousine is but an enclosed touring car and while the term "touring car" is alluring and has served highly useful purposes, it is an open question if the industry has not suffered from an excess of such vehicles coupled with a riot of surplus horsepower.

Probably it is too early to unequivocally make the assertion but it is not improbable that, however slight, the trend toward town or suburban cars may prove a parting of the ways which may lead to a better state of affairs. Cars of the sort suggest more than fair-weather utility and with their general adaptability, their lightness and their moderate rating of horsepower they should appeal strongly to a very numerous class to whom limousines are impossible or to whom racy-looking rigs loaded to the nozzle with horsepower are suggestive of such speed and danger and general bedevilment that they are undesirable and are the last things with which a man of family would trust his womenfolk.

The development of the light, moderate-powered, all-weather car is but another finger post pointing to the direction which, as the Motor World has previously remarked, the automobile industry must travel—the well trodden and clearly marked route followed by the carriage trade to a fixed place in the world's affairs. The future is now the subject of most serious concern to very many of those engaged in automobile manufacture and to all such men the history of the very much older and

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more firmly established industry, and also of the newer bicycle business holds much that should prove in the nature of if not a safe guide, then at least the safest guide that is available. Very many who would have poopoohed the suggestion but a few short years, have but to turn back a few pages of their books to discover some very illuminating and helpful truths.

Dealers and Their Customers.

One of the most difficult relationships to define and preserve is that existing between the manufacturer and his agent or dealer, on the one hand, and the individual buyer, on the other. For the well being of any industry, it is essential that a spirit of friendly co-operation, even of partnership, be established, through which the producer is enabled to keep in touch with the result of his own efforts, as well as to learn the temper of his market in order to keep abreast of the times in the way of improvement; while it is equally desirable for the consumer to be brought close enough to the source of supply to get the best possible service out of the product, as well as to improve upon it by renewal of parts or complete refitment, as the case may be, for the sake of economy. In fact, the need of such an acquaintanceship is economic from both points of view, and almost equally important to both parties.

One essential difficulty which bars the way to a complete relation of this nature results from the way in which advantage is taken of it, and in the automobile industry especially, it is the case that wherever a maker or dealer stands ready to render every possible assistance to his customers, he is put to considerable loss of time, some money and a great deal of patience in order to maintain the position he has assumed.

The owner of a small car who is continually bombarding its maker with questions as to how this or that part should be adjusted, how much it would cost to install a bigger engine, or a bigger body, or to put on tires or lamps of a different size, or who visits the agency several times a week in order to obtain "points" on the maintenance of his machine, is a familiar pest. Worse than the fact of his existence is the fact that he must be treated with at least nominal courtesy, as otherwise, he is certain to secede and carry his troubles and all the inside information he has been able to borrow and steal, to some less, or more, fortunate rival. Closely akin to him are the man who is forever trying to graft new parts on an old guarantee, and his friend who advises this improvement, or that one, the only fault of which is that it is absolutely impracticable in every way.

The customer who assumes the full weight of responsibility for the manufacture of an entire line of cars, and the one who makes a club house of the agency where he purchased his one poor little wheeze of a car, along with the chronic kicker, are the indegestible portions of the food upon which the maker and dealer have to live. They are more or less a necessary accompaniment of it, and—to change the simile—have to be nurtured with all the care that should have been given the goose which laid the golden eggs. To do so, involves much of diplomacy and tact, in addition to the three other qualifications suggested. Just how to manage them and how to divide the burden which they constitute between the maker and agent, are problems well worth careful solution. Whatever the outlay involved in securing and maintaining their friendship and reliance, as well as that of their less troublesome fellow users, is to be regarded as a legitimate outlay, however, and as a bond paying cumulative interest.

It is a pleasure to note that the Motor Age has so far recovered from its violent attack of hysteria, as to be able to discern that it is wiser that track racing be governed than that it be thrown to the dogs and permitted to exist without check or regulation of any sort. Meanwhile, we earnestly hope our Chicago contemporary will "throw a fit" over the football situation. On Saturday last not less than three young men were killed and five seriously injured in the pursuit of that sport.

Photographs recently received in this city appear to show that the American Ambassador to the Court of St. James uses a French automobile. Somehow there is something about diplomatic service abroad that has a queer effect upon the patriotism of Americans. It is well known that one former representative of the United States so far lost his love for his native country as to declare it unfit for a gentleman's residence and he is now a blooming Britisher in all except nativity. The Hon. Whitelaw Reid probably has no inclination in that direction, but it would seem that to a man of his training the wisdom of representing his country in all things would be broader diplomacy than mere ambassadorship. America produces excellent automobiles and there would be something akin to a display of patriotism for an American ambassador to do his automobiling in a machine made in his native land, in the products of which he is at least supposed to take pride.

COMING EVENTS

October 12, Rochester, N. Y.—Rochester Automobile Club's annual hill climb at Penfield Dugway.

October 12, Newton, Mass.—Bay State A. A.'s gymkhana games.

October 12, Chicago, Ill.—Chicago A. C.'s postponed race meet at Harlem track.

October 16, Birmingham, Ala.—Race meet at State fair grounds.

October 18, Middletown, Pa.—Motor Club of Harrisburg's race meet at Middletown track.

October 26, Allentown, Pa.—Race meet at fair grounds track.

October 24-31, New York City—Automobile Club of America's eighth annual show in Grand Central Palace.

November 2-9, New York City—Association Licensed Automobile Manufacturers' eighth annual show in Madison Square Garden.

November 9-16, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show at First Regiment Armory.

November 15-16, Newark, N. J.—New Jersey Automobile and Motor Club's 24-hour endurance contest.

November 26, 27, 28, Chicago, Ill.—Chicago Motor Club's three days' 600-mile reliability run.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

December 9-14, Detroit, Mich.—Detroit Automobile Dealers' Association's show at Wolff's pavilion.

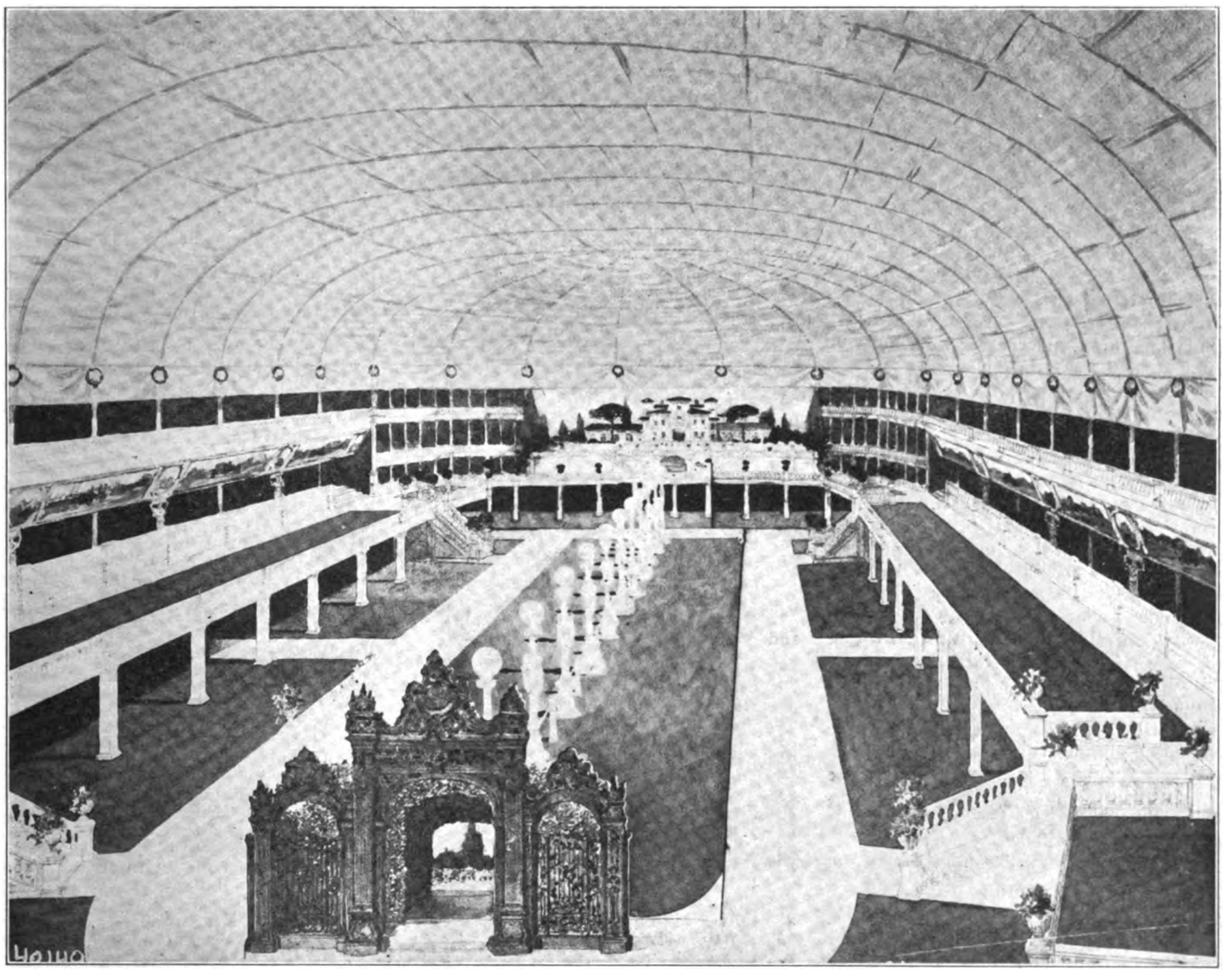
February 10-15, Detroit, Mich.—Tri-State Automobile and Sportsmen's Association's show in Light Guard Armory.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association show in Duquesne Garden.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's show.

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ITALIAN VILLA EFFECT FOR GARDEN SHOW



INTERIOR VIEW OF MADISON SQUARE GARDEN SHOWING DECORATIVE PLAN

Not Switzerland, as was the case on the last occasion, but Italy, will supply the setting for the Association of Licensed Automobile Manufacturers' show in Madison Square Garden, New York, November 2d, to 9th; and there will be much less of Italy than there was of Switzerland. There will be no star spangled sky, and while there will be statuary and other staff-work, there will not be so much of it. While the accompanying illustration will serve to convey a general idea of the decoration plan that has been adopted it cannot, of course, carry any true suggestion of the beauty of the coloring. If not so ornate as on previous occasions, in the language of the official word-painter, the "simpler setting means a gain of spacious effect and out-of-door feeling and will serve to lend more lustre to the gems of the automobile industry."

The color scheme is to be gray and crimson and white. There will be no starry sky overhead, but the girders of the big dome will be screened by a canopy of soft material, rich, warm gray in tone. The exhibition spaces of the main floor and elevated platform will be carpeted with a specially woven fabric of deep crimson, with the visitors' aisles between sharply set off by the gray material. Entering from the foyer, the visitor will be confronted by a towering gateway, a replica of one at the Florio Toresca villa in Florence. Back of the real iron gratings of this gate way, will be visible a garden wall with trees and shrubbery behind. While on canvas, this garden will have a literal perspective of seven feet, for the gateway structure has just that much depth. Beyond this entrance piece will extend the main display space, a broad path of rose hue, between the side aisles, with a row of ornamental pillars, fourteen feet in height, crowned by lamp globes extending along the middle. In the distance, at the Fourth avenue end, the vista will be that of Italian villas with terraced gardens of their own. This view will be presented by an immense painting, such as was used last year to mask the tiers of boxes and rear walls.

The plan of having the elevated platform above the arena boxes project slightly over the main floor and of covering the high rear seats so as to make a sort of mezzanine floor, will be repeated, but the idea has been extended and the lines of the Garden are to be further obscured and more space gained by decking over the first balcony, so as to have the flooring extending beyond the balcony railing and over lapping the elevated platform. For the edges of the balcony, the platform and mezzanine floor,

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special railings have been designed, which, like the lamp and sign pillars, will be finished in pure white. In the general view, these railings of the platform, mezzanine floor and balcony will rise in three rows at the sides and the downward and backward slope from the balcony railing to the supports will be dressed in the gray and crimson. The stairways from the main floor to the platform will be white, with the newel posts supporting ornate urns containing ferns and flowers. The lamp pillars on the main floor and other pillars, twelve foot high, on the platforms, will all bear shields displaying the names of the exhibitors whose space they mark, this being a distinctly new and artistic sign scheme. A few heroic stautes in staff work will adorn the platform.

The same gray and crimson scheme will be found in the cafe and basement, but in the latter place the walls which do not flank exhibits will be picture covered. A rathskeller with novel grotto effect will be located in an out of the way corner of the basement.

In the concert hall, a departure in the decorative scheme is to be made by arranging it as an adjunctory rose garden, set with latticed arbors in green and white. There will be an arched entrance, with lattices of the double diagonal pattern framed in white, a central dividing lattice down the hall, while the walls under the balconies and back of the stage will be finished with the same restful design.

The full list of exhibitors at the show and their space allotments are as follows:

Main Floor.

1 Pope Motor Car Co.
2 Royal Motor Car Co.
3 Buick Motor Co.
4 Autocar Company.
5 F. B. Stearns Co.
6 Elmore Manufacturing Co.
7 Northern Motor Car Co.
8 Lozier Motor Co.
9 Knox Automobile Co.
10 Haynes Automobile Co.
11 Electric Vehicle Co.
12 Apperson Bros. Automobile Co.
13 Locomobile Co. of America.
14 Packard Motor Car Co.
15 Cadillac Motor Car Co.
16 The George N. Pierce Co.
17 E. R. Thomas Motor Co.
18 H. H. Franklin Mfg. Co.
19 Stevens-Duryea Co.
20 Peerless Motor Car Co.
21 Pope Manufacturing Co.
22 Olds Motor Works.
23 Winton Motor Carriage Co.

Elevated Platform.

24 Waltham Mfg. Co.
25 Matheson Motor Car Co.
26 Walter Automobile Co.
27 Selden Motor Vehicle Co.
28 Alden Sampson, 2nd.
29 The White Company
30 Corbin Motor Vehicle Corporation.
31 Studebaker Automobile Co.

Exhibition Hall.

32 Babcock Electric Carriage Co.
33 Studebaker Automobile Co.
34 Rauch & Lang Carriage Co.
35 General Vehicle Co.
36 Pope Motor Car Co.
37 Columbus Buggy Co.
38 Electric Vehicle Co.
39 Baker Motor Vehicle Co.

Basement.

41 Knox Automobile Co.
42 Royal Motor Car Co.
45 General Vehicle Co.
46 Northern Motor Car Co.
47 Pope Motor Car Co.
48 Packard Motor Car Co.
49 Studebaker Automobile Co.
50 Alden Sampson 2nd.
51 Champion Wagon Co.
52 Cadillac Motor Car Co.
53 H. H. Franklin Mfg. Co.
54 E. R. Thomas Motor Co.
55 Hewitt Motor Co.

Mezzanine Platform.

56 Diamond Rubber Co.
57 C. F. Splitdorf.
58 Goodyear Tire & Rubber Co.
59 Shelby Steel Tube Co.
60 Dayton Electrical Mfg. Co.
61 G & J Tire Co.
62 Gray & Davis.
63 The Veeder Mfg. Co.
64 R. E. Dietz Co.
65 Atwater-Kent Mfg. Works.
66 Byrne, Kingston Co.
67 National Carbon Co.
68 Baldwin Chain & Mfg. Co.
69 Brennan Mfg. Co.
70 N. Y. & N. J. Lubricant Co.
71 Schwartz Wheel Co.
72 The Autocoil Company
73 Hess-Bright Mfg. Co.
74 Webb Manufacturing Co.
75 Swinehart Clincher Tire & Rubber Co.
76 Light Mfg. & Foundry Co.
77 Warner Instrument Co.
78 Morgan & Wright
79 Columbia Nut & Bolt Co. Inc.
80 Hartford Auto Parts Co.
81 Cook's Standard Tool Co.
82 The Auto Pump Co.
83 Leather Tire Goods Co.
84 Duff Mfg. Co.
85 Precision Appliance Co.
86 Stewart & Clark Mfg. Co.
87 Janney-Steinmetz & Co.
88 Chandler Company.
89 Globe Machine & Stamping Co.
90 Kilgore Manufacturing Co.
91 Firestone Tire & Rubber Co.
92 Oliver Manufacturing Co.
93 Hartford Suspension Co.
94 Phineas Jones & Co.
95 Jones Speedometer Co.
96 Pennsylvania Rubber Co.
97 Motsinger Device Mfg. Co.
98 Timken Roller Bearing Axle Co.
99 Warner Gear Co.
100 Remy Electric Co.
101 The Manufacturers Foundry Co.
102 Brown-Lipe Gear Co.
103 Pittsfield Spark Coil Co.
104 Whitney Mfg. Co.
105 The Standard Welding Co.
106 The American Ball Bearing Co.
107 The Badger Brass Mfg. Co.
108 The Fisk Rubber Co.
109 Hyatt Roller Bearing Co.
110 Whitlock Coil Pipe Co.
111 Rose Manufacturing Co.
112 Midgley Mfg. Co.
113 Hartford Rubber Works Co.
114 The B. F. Goodrich Co.

Balcony.

115 Witherbee Igniter Co.
116 Joseph Dixon Crucible Co.
117 Valentine & Company.
118 Eastern Carbon Works.
119 A. R. Mosler & Co.
120 R. E. Hardy Co.
121 F. H. Wheeler.
122 O. W. Young.
123 National Battery Co.
124 The Edmunds & Jones Mfg. Co.
125 The Gilbert Mfg. Co.
126 The Uncas Specialty Co.
127 Bethlehem Steel Co.
128 The Wm. Cramp & Sons Ship and Engine Building Co.
129 J. H. Sager Co.
130 American Electrical Novelty & Mfg. Co.
131 Adam Cook's Sons.
132 Carpenter Steel Co.
133 The Republic Rubber Co.
134 Hotchkin Mfg. Co.
135 Gray-Hawley Mfg. Co.
136 Weed Chain Tire Grip Co.
137 Winchester Speedometer Co.
138 The Lipman Mfg. Co.
139 Vesta Accumulator Co.
140 Spicer Universal Joint Mfg. Co.
141 Auto Improvement Co.
142 R. H. Smith Mfg. Co.
143 Herz & Co.
144 McCord & Co.
145 Index Speed Indicator Co.
146 Holley Bros. Co.
147 Gabriel Horn Mfg. Co.
148 Consolidated Rubber Tire Co.
149 William C. Robinson & Son Co.
150 Standard Roller Bearing Co.
151 Noera Mfg. Co.

Concert Hall.

152 Sprague Umbrella Co.
153 Auto Accessories Mfg. Co.
154 American & British Mfg. Co.
155 Indestructible Steel Wheel Co.
156 S. F. Bowser & Co., Inc.
157 Rands Mfg. Co.
158 Springfield Metal Body Co.
159 Wm. J. Duane Co.
160 Pantasote Company.
161 The Prest-O-Lite Co.
162 Ajax-Grieb Rubber Co.
163 The Sherwin-Williams Co.
164 C. Cowles & Co.
165 Motor Car Specialty Co.
166 Gemmer Mfg. Co.
167 Wray Pump & Register Co.
168 Aurora Automatic Machinery Co.
169 Diamond Chain & Mfg. Co.
170 C. T. Ham Mfg. Co.
171 The Hoffecker Co.
172 Avery Portable Lighting Co.
173 Stackpole Battery Co.
174 Electric Storage Battery Co.
175 Hancock Mfg. Co.
176 Muncie Auto Parts Co.
177 L. C. Chase & Co.
178 Coes Wrench Co.
179 Conn. Telephone & Electric Co.

Balcony.

180 The Randall-Faichney Co.
181 Isaac G. Johnson & Co.
182 Acetyvone Company.
183 J. S. Bretz Company
184 Voorhees Rubber Mfg. Co.
185 Manhattan Screw & Stamping Works
186 The Westinghouse Machine Co.
187 Breeze Carbureter Co.
188 Rushmore Dynamo Works
190 English & Mersick Company
192 Thos. Prosser & Son

Second Tier Boxes.

193 Chas. E. Miller
194 The AZ. Company
195 H. A. Allers & Co.
196 E. M. Benford
197 Traver Blowout Patch Co.
198 John W. Masury & Son
200 Antioak Tire Company
202 Delta Mfg. Co.
203 Igniter Appliance Co.
204 Watres Mfg. Co.
205 Jeffery-Dewitt Co.
206 C. A. Shaler Co.
207 Continental Cauotchouc Co.

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Basement.

208 New York Sporting Goods Co.
209 Michelin Tire Company
210 Merchant & Evans Co.
211 Healy Leather Tire Co.
212 Robert Bosch, N. Y., Inc.
213 Havoline Oil Co.
214 Class Journal Co.
215-A Dow Tire Co.
215-B American Motor Co.
215 Blue Ribbon Auto & Carriage Co.
216 Amos Shirley.
217 Manhattan Auto Top & Body Co.
218 Gould Storage Battery Co.
219 P. Rielly & Son
220 Lavalette & Co.
221 Lavalette & Co., Importers
222 Pierson Motor Supply Co.
223 Albert Champion Co.
224 Columbia Lubricant Co. of New York
225 Auto Supply Mfg. Co.
226 New Departure Mfg. Co.
228 Troy Carriage Sun Shade Co.
229 American Aluminum Coating Co.
230 Ventilated Cushion & Spring Co.
231 Glaenzer & Co.
232 L. J. Mutty Co.
233 Charles J. Downing
234 The Kalb & Berger Mfg. Co.
236 Leon Mann.
237 Hendee Mfg. Co.
238 Bicycling World Co.
239 Reliance Motor Cycle Co.
240 G. H. Curtiss Mfg. Co.
241 Light Mfg. & Fdy. Co., Motorcycle Dept.
242 Thomas Auto-Bi Company
243 Pope Mfg. Co.
244 Reading Standard Co.
245 Ovington Motor Co.
246 Brown Mfg. Co.
247 N. S. U. Cycle & Motor Co.
248 Excelsior Motor & Mfg. Co.
249 Armac Motor Co.
250 Consolidated Mfg. Co.
251 Merkel Motor Co.
252 Automobile Topics.
253 Livingston Radiator Co.
254 National Oil Pump & Tank Co.
255 S. Smith & Son, Ltd.
256 A. W. Harris Oil Co.
257 Hopewell Bros.
258 Motor
259 John T. Stanley
259-A Motor Print Co.
260-A New England Automobile Journal
260 Standard Brake Co.
261 Trade Advertising & Pub. Co.
262 Vacuum Oil Co.
263 Julius King Optical Co.
264 Patterson, Gottfried & Hunter, Ltd.
265 Empire Auto Tire Co.
266 Horseless Age
267 Briscoe Mfg. Co.
268 Heinze Electrical Co.
269 Hicks Speed Indicator Co.
270 Comstock Shock Absorber Co.
271 Motz Clincher Tire Co.
272 The Post & Lester Co.
273 Norton Company.
274 Newmastic Tire Co.

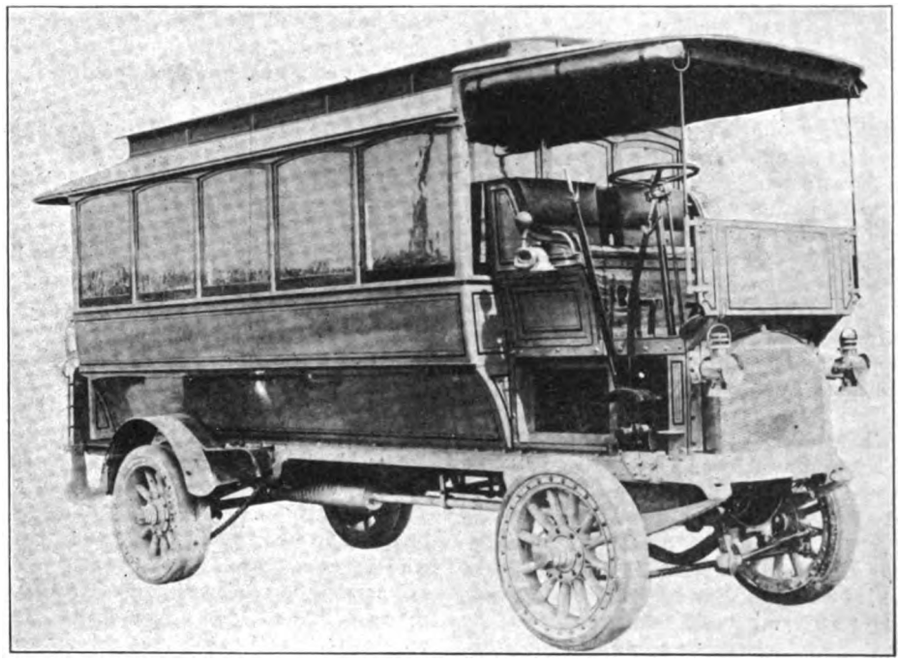
3d Tier Boxes.

275 Kitsee Storage Battery Co.
276 Peerless Igniter Mfg. Co.
278 Allen Auto Spec. Co.
279 The Turner Brass Works
280 Geiszler Bros.
281 Ed. Dubied & Co.
282 Tavernier & Quezin
286 Automobile Utilities Co.
287 Aluminum Solder & Refining Co.
288 Norris Auto Co.
289 Victor Shock Absorber Co.
290 The Atlantic Refining Co.
291 Loring Auto Appliance Co.
292 Empire State Tire Co.
293 Clover Mfg. Co.
294 The Perfection Spring Co.

AIDING GROWTH OF A SUBURB

Free Bus Line Operated in Developing New Section in Jamaica—Vehicles Large and of Reasonable Speed.

Lacking a trolley system on their streets, the promoters of the real estate enterprise on Long Island known as the Jamaica Estates have inaugurated an automobile car line for the benefit of their customers, so that residents of the property may have transportation to and from the Jamaica station of the Long Island railway. As the number of houses and residents increase, it is possible the idea may be further extended to provide a through automobile car line to Manhattan itself. An entirely feasible route via Hillside boulevard, which borders the Estates, Hoffman boulevard, Blackwell's Island bridge, East 60th street and Fifth avenue, offers itself. While the houses are still being built and prospective customers are being interested, the buses, one of which is shown in the illustration, are operated free, for the convenience of anyone wishing to inspect the property.



BUS ON JAMAICA ESTATES FREE LINE

Each bus or car accomodates 22 passengers, the vehicles being the products of Mack Bros., Allentown, Pa. The power equipment is a vertical four cylinder water-cooled motor, 5½ by 6 inches, rated at 50 horsepower. The transmission is of the individual clutch, selective type, with three forward speeds and a reverse, the drive being direct on third speed, with no gears in mesh. Double chain drive is used, to the rear wheels. The clutch is conical and is fibre lined. A double system of ignition is employed, being supplied by high tension magneto and by dry cells, respectively. The wheel base is 168 inches and the tread 72 inches. At a normal motor speed of 800 revolutions per minute the cars make about 12 miles an hour, but 20 miles an hour is possible on good roads and level running. The fuel capacity is 22 gallons of gasolene, giving a range of about 80 miles without replenishing. The machines, which are a regular stock model, sell for $6,500 apiece.

Precaution Against Broken Shaft.

Although the average driver of the shaft-driven car probably seldom realizes it, the unlikely accident of a broken shaft may be the cause of a most perilous misadventure. If the forward joint should happen to give way, for instance, the free end, falling to the ground, would immediately dig its nose well into the surface, in all likelihood overturning the car. A similar danger, though of less serious nature, exists in the case of the radius and distance rods which are used in staying the rear axle. As far as the cardan joints are concerned, however, one crumb of comfort remains, in that generally speaking, the strength of the protecting grease case is sufficient to prevent the free end of the shaft from falling, at least immediately on the giving way of the joint. The disconnection of engine and transmission, giving instant warning of trouble, even if no other and more audible indication is given, thus gives the driver time to pull up before the shaft drops. Notwithstanding this assurance, however, one well known foreign driver, is said to be in the habit of stringing wires across the under side of his chassis in such a way that in the event of an accident of this nature, the fractured member would be kept clear of the ground.

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CHARITY AND MUCH MOORE OF IT

It Is to Ooze from a Road Race for Stock Cars—Two-Man Association Reorganizing to Run It.

T. Francis Moore, who is president and fifty per cent. of the "membership" of what is styled the Metropolitan Automobile Association, has officially announced that early next year it or he will conduct that "long distance road race for stock cars," which was not run on the Vanderbilt course this fall simply because a ton of lead suddenly fell on the project and crushed it flat after the sheriff and supervisors all had been "fixed up."

Moore says April 20th probably will be the date of the race, which will be run on a course "near New York." If it occurs, it will be a one day affair only and not a two days scorch as the late lamented project was to have been; also it will not be speculative sport, but a race for sweet charity's sake, with a very large C. "Everything above the running expenses will be turned over to some charitable institution," says Mr. Moore. And Old Running Expenses, like Sweet Charity, can be made to cover a multitude of sins and other items.

Mr. Moore's desire to serve the cause of charity is so great that he means even to reorganize his Metropolitan Automobile Association. Before April 20th it is believed that its membership will be doubled and that fully six names then will be on the roll. Meanwhile, that obliging gentleman, Robert Lee Morrell, has consented that his name be used as chairman of some sort of an executive committee.

Chicago Plans Reliability Run.

A three-days reliability run covering 600 miles is the latest project of the Chicago Motor Club, which this week decided to promote a strenuous contest of this kind during the week preceding the Chicago show. The dates selected are Tuesday, Wednesday and Thursday, November 26, 27 and 28.

The Windy City organization's latest effort for publicity for its members will be divided into three parts, the finish of each day's run bringing the contestants back to Chicago at night. The first day's run will be to South Bend, Ind., and return; Wednesday's turning point at Milwaukee, and Thursday's route to Rockford, Ill., and back.

Three classes will be provided, for cars selling at $1,500 and under, under $3,000 and over $3,000. Each entrant must nominate an observer that will be able to satisfy the committee he knows an automobile from head to tail light and in between.

It will not be a sealed bonnet contest, but the committee intends to seal the hub caps, gear cases, differential cases, steering gear parts, coils and magneto covers, but it does not follow that a car will be disqualified if one of these seals is broken. Instead the committee will attach a penalty to an infraction of this kind, varying to the character of repair or replacement necessary. Penalties for adjustments will be imposed according to the time taken in making them.

As passengers will be difficult to procure at the time of the contest, each car will have to, of course, carry a driver and observer, and in case of a touring car a mechanic may be taken along, but five passenger cars will carry dead weight for the absent passengers, figuring on 150 pounds of sand for each absent passenger.

At the completion of the test the technical committee of the contest will give each car a short running test on the road. In case it is found that the car is not in good running order penalities will be imposed even if the car has survived the ordeal without touching a seal.

Stories of the Roadside Signs.

An observing person who tours extensively should be able to write quite an interesting chapter on the signs set at the roadside by village officials, remarks a tourist of the sort. In Monmouth county, New Jersey, for instance, there is a sign reading: "Automobilists must be moderate. By order of the Freeholders." There is nothing to indicate whether moderation in drink or speed is meant. Up in the Catskill mountains, New York, all road travelers are suddenly confronted by a sign saying: "Blow your horns here," and nothing more. The motorist knows that this is meant for him, but it must be a bit startling to those who have no horn. In northwestern Pennsylvania, it has been thought worth while to try politeness, and a sign reads: "Please go slowly here." That "please" appeals to almost every man behind a wheel and he slackens his speed. Of the other sort there are several on Long Island, where big bullying placards bid "Autoists Beware! The speed limit will be strictly enforced."

Lubrication the Most Important Point.

If there is any one most important point connected with the use of gasolene engines, or engines of any other sort, for that matter, it is the matter of lubrication,' remarked a motor manufacturer a few days since, "but despite its importance it is difficult to drill the fact into the brains of those who use motors. Whether they use motor cars, motorcycles, motor boats or air ships, the disposition of the operators is to give the motors too little oil. 'Spare the oil and spoil the motor' is a paraphrase that ought to be pasted or engraved prominently on the dash of every car."

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

RULES AND ROUTE FOR JERSEY RUN

Endurance Contest to be 24 Hours of Ordinary Road Driving—Twice Over Course of Nearly 100 Miles.

There is nothing new or startling in the rules for the New Jersey Automobile and Motor Club's 24-hours endurance contest, which has been set for Friday and Saturday, November 15 and 16. When the subject of a 24 hours' contest over New Jersey roads was first broached it was thought that it would develop into a scorch for a chronological day. This is far from being the case, as the contest merely is the old-fashioned endurance contest on a twenty-four hour schedule.

The route, as mapped out, will take the contestants over 94.4 miles, the same course being covered twice. Consumption of gasolene and oil will not figure in the awards, but the contestants will be scored for repairs and replacements, and failure to arrive at a control on or ahead of time. In this run the cars all will be considered in one class, the division of touring cars and runabouts not being made as was the case in some previous contests of the sort.

To arrive at the final control more than three minutes ahead of schedule or more than three minutes behind the time set for arrival will cost the contestant two points in either case, while a stop of the motor between controls, without making adjustments will result in a loss of three points. A stop of the motor for the purpose of making repairs or adjustments will mean a deduction of four points, while three will be charged if the car is stopped on the last circuit, even if no repairs or adjustments are made. To repair a car or make adjustments with the motor running means a loss of two points and if more than the driver assist in making repairs, double the rate will be charged.

The route, which will be covered twice in the two days, is as follows: Newark, Bloomfield, Glen Ridge, Montclair, Verona, Caldwell, Pine Brook, Parsipanny, Danville (24.7 miles), Rockaway, Dover, Kenvil, Succasunna, Mt. Freedom, Morristown (45 miles), Bernardsville, Far Hills, Bedminster, Pluckemin, Somerville (66.7 miles), Bound Brook, Dunellen, Plainfield (78.3 miles), Scotch Plains, Springfield, Hilton, Irvington and Newark (94.4 miles).

Eads Gives the Kids an Outing.

Instead of waiting for a club to do it the Premier Motor Mfg. Co., through its sales manager, R. I. Eads, last week took the initiative and gave the orphaned children of Marion county, Indiana, an automobile outing. More than 100 children were given the "time of their lives," it requiring 21 cars to care for them all. Needless to add, all of the cars employed were Premiers.

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ATTITUDE OF CARRIAGE BUILDERS

Importance of the Automobile Industry Discussed at Their Annual Meeting—Carriage Trade Slackening.

Carriage dealers from all over the country gathered in New York this week for the thirty-fourth annual meeting of the Carriage Builders' National Association of the United States. In the course of their deliberations and speech making, the automobile was not overlooked and it appeared with some prominence, also, at the show where new carriage models were exhibited for the benefit of dealers, five cars fatherd by carriage makers being among the exhibits. Of the addresses delivered, that of the president of the organization, Daniel T. Wilson, head of the fashionable New York carriage concern of Flandrau & Co., had the most direct concern with the automobile. He told the members that they should have to consider the automobile in their future reckonings and advised their taking up the sale and partial manufacture of motor cars. He also commented on pertinent phases of general business relating to the vehicle trade and to the automobile trade, as well.

"Every carriage manufacturer, repairer and dealer in the United States," said Wilson, "must be aware of the changing character of our trade, and should know that the builders of every grade of work, from the lowest-prived buggy to the costliest four-in-hand, must at once welcome the automobile as a legitimate part of their business, to be studied and built and sold by carriage builders. I do not mean the costly and intricate chassis, though a tendency is already noted towards purchasing the complete automobile from carriage builders—but we should surely supply all those parts pertaining to our trade.

"Carriage builders have the plant, experience and workmen to properly manufacture and repair automobile carriage work, can do the work as well as for the horse-drawn vehicle, and should seek that business from the customers who have always favored them with their trade."

In relation to the general conditions prevailing in the vehicle industry at the present time, President Wilson gave expression to views which must be of interest to those recognizing their relation to the automobile field.

"You will all agree," he said, "that in the last few months there has been a lessening of the tremendous demand and activities in our trade, and carriage builders must use great caution, both now and in the future. Additions to plants should be avoided; a reduction of stock on hand, finished and in process of finishing must be made; the purchase of all materials curtailed as nearly as possible to assured requirements; our liabilities reduced so that we may do our rightful share in getting the plants and stock carried more in proportion to the capital invested. This every trade, for a few years, at least, must do—not that hard times are again upon us, but that the wonderful and enormous expansion of all trades in all lands has been so great that a reaction, not heavy, but a reasonable reaction, is naturally due."

Addressing the convention from the retailers' standpoint, Henry M. Duncan, of New York, declared that the retail carriage dealers had this year been "up against a hard game." He blamed it partly on the motor car, but disclaimed any enmity against it.

"I am not one of those who believe that the horse is destined to disappear from our streets," he said. "I believe the horse has an abiding place in the commerce as well as the affections of the world. But I am not going to knock the auto builder. I would rather throw bouquets at him and secure his friendship. Knocks don't phase him anyway, as he knows he is the next thing.

"As to the auto, the limit of whose progress no man can tell, it has found its place and will abide, and the wise carriage maker is the one who takes a hand in the game and secures a portion of the profits."

The difference between the carriage and the automobile situations was never better illustrated than by two shows which are being held in New York this week, over which no fuss the lowest-priced buggy to the costliest discharged, and without the public being worried about "1908" models or anything of the kind. The carriage builders are holding their annual convention, and the makers of tires, wheels, tools, parts and accessories fill the whole of the St. Nicholas Rink on Sixty-sixth street with their exhibits in their campaign for the manufacturers' business, while at Grand Central Palace the complete vehicles hold forth for the inspection of dealers and such of the public as wish to attend. Meanwhile purchasers of carriages and horsedrawn vehicles are not withholding their orders in breathless impatience to discover what the 1908 models will be, nor do they entertain any fears that by purchasing a few days before the carriage show that they will have to endure the scorn of their friends and neighbors for getting "stuck" with a 1907 model when by waiting they could have had a 1908 product.

Making Large Nuts Serve.

In an emergency, a nut that may be too large for permanent use, may be made to serve merely by striking it with a stone or hammer and thus throwing it "out of round." In this oval shape it will hold the threads on two sides, but it will be necessary to watch it to see that it does not work off.

CONNECTING UP THE SPARK COIL

Some of the Difficulties and Suggestions for Meeting Them—Explanation of Signs on French Ternimals.

Although to one who is familiar with the inner construction of the typical spark coil, as well as its scheme of action, there is nothing difficult or complicated in making the proper connections when mounting it on the car, one who is not so well informed frequently is sorely puzzled to make the system work properly. This is further complicated when an unusual type of coil is employed in which the leads are taken out of the case in a single group unlabelled, or are marked with symbols denoting foreign words, as is generally the case with French coils. The varying number of terminals found in different coils, also contributes to the confusion.

As a matter of fact, there are no less than eight points of connection to be made in completing the system for each cylinder, where the usual jump spark system is employed. Ordinarily these are reduced to three or four per cylinder, and in multiple-unit coils, to even less, one terminal commonly serving as a ground return for all the circuits. Where the terminals are unlabelled or where the marks are indistinct, it usually will suffice to make a preliminary test by connecting the battery to various points in turn until the proper spark is developed. Some little confusion will result when this is attempted, however, unless the principle of the thing is perfectly understood, and, as a matter of fact, no exact directions can be given which will serve where it is not.

As for the coils which are marked plainly but in the initials of French instead of English terms, the matter is not so difficult For instance, in many of the older coils. either of French origin, or made after the French plan, the usual lettering for the four terminals is M, P—plus, C, and B; in which M stands for "masse," and means that that terminal should be connected to the mass or frame of car or cycle. It corresponds to "earth," though no actual earth connection ever is made, the body of the car providing the return path for the current. The letter P, stands for "pile," that is battery or accumulator, and shows that the terminal is connected to one end of the primary winding of the coil, and this is coupled to one of the wires proceeding from the accumulator or dry cell, usually the positive or plus wire. If this terminal be marked P—plus, it may at once be understood as meaning "primary terminal to be coupled to positive of accumulator." C, denotes the outgoing terminal, and in all types of coils, whether French or English, should be coupled to the contract breaker, or commutator, either directly or through the intermediary of any

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switch, that is necessitated by the system of wiring. B, the abbreviation of the French word "bougie" stands for the plug, and points to the fact that this terminal must be coupled direct to the terminal of the ignition plug.

With a view to rendering these abbreviations clearer some makers mark additional letters near the terminals, such as P—plus, and A—plus, for primary coil, indicating that this terminal must be cannected to positive pole of accumulator or dry cell; plus signifying positive. Along with M, near one terminal may often be found the letter E, this being the corresponding English term for the French word "masse." The terminal B, which, as already noted, should be coupled direct to the sparking plug, also is marked frequently with the additional letters S. P. (sparking plug). But the question becomes less complicated, when, by reason of internal connections having been made in the coil itself, the number of external terminals is reduced to three only, which in these cases are marked P, B and C, that is to say, battery, plug, and commutator.

Old Question of Speed Revived.

A revival of the old debate as to whether cars run better at night than they do in the daytime, has been going the rounds of the foreign press for some little time, and with the result of bringing forth the usual differences of opinion. The matter appears to have been definitely settled, however, by a locomotive superintendent, who states it as his opinion that although both with cars and railway trains, it is customary to judge speeds as being faster at night than in the daytime, the difference is due entirely to an error in judgment in the latter. case. His observation has been that in both cases, speed indicator and distance schedule results have shown no actual difference either way. His locomotive experience has entended over twenty-five years, he says, while as to automobiles, for the last three years, he has been daily making a stated run night and day, and over the same road.

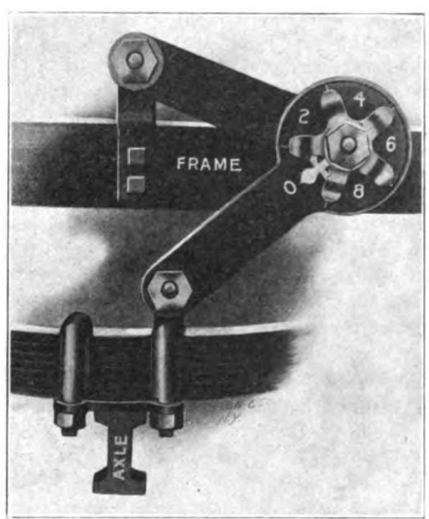
Utilizing Principle of Pelton Wheel.

An effort to develop a form of hydraulic transmission, utilizing the principle of the Pelton water wheel, recently has been made abroad. The driving portion of the system consists of a centrifugal pump, actuated directly by the motor, and drawing its supply of water or oil from a special reservoir. The driven members comprising an individual motor for each wheel of the vehicle, consist of a set of true Pelton wheels, mounted in suitable casings partly enclosed by the great "dish" of the wheels themselves. The casings are stationary, and the rotors within them drive the wheels through planetary reduction gearing, exhausting back to the supply tank. The arrangement is especially designed for the use of heavy vehicles of the commercial type.

SHOCK ABSORBER IMPROVED

New Features Added to the Truffault-Hartford—Device to Assist in Making Exact Adjustments.

Considerable improvement has been made in the Truffault-Hartford shock absorber for 1908 by the Hartford Suspension Co., 67 Vestry street, New York City, through the adoption of an extremely simple indicator applied to the regular tension adjustment, whereby it is possible to equalize the resistance upon opposite sides of the chassis, thus obviating any possible tendency to warping the frame, or straining it unnaturally. In addition to this, some little improvement has been made in the construction of the friction joint itself as a result of which the durability of the arrangement is not a little increased.



Three arms of equal dimension, two of them being paired and placed in opposition to the other, are joined together by means of a central stud, their respective extremities being joined to the frame and the spring seat of the axle. The central arm works over a hardened steel bushing which rides on the stud, with a straight up and down motion, without side swaying or any tendency to shearing. Directly outside the central arm, are placed the friction discs, which are of secret composition, having self-lubricating properties such that no lubrication is effected until the temperature has been raised almost to the point of abrasion. The material employed, was introduced last year, and has proved equal to all that was claimed for it at that time. The two outer arms bear against a couple of brass discs, cup shaped, and firmly secured in place, instead of directly against the friction washers, as formerly. Over these is fitted a brass cup, into which the friction and brass discs are telescoped. A complete protection of the joint and guard against the admission of dirt is thus formed.

The special new feature, consists in the use of a pointer arrow and recording dial in connection with the five pronged steel washer and locking nut which binds the parts of the friction joint together. By its use it is possible not simply to adjust the several absorbers mounted on any car in such a way as to give an equal resistance to spring plunging, but also, to make that adjustment suit the exact requirements of the car, as measured in terms of its gross weight. A blue print is furnished with each set of absorbers, showing how they should be applied to the car, as well as a table, showing the setting which should be given in order to get the proper results. As adjusted at the factory, the end joints have a resistance of 10 pounds each, and the main or center joint, 20 pounds. This is sufficient tension for a car weighing from 1,600 to 1,800 pounds. For a car weighing from 1,800 to 2,000 pounds, the pointers are turned from 0 to the 1 mark, and so on, each division of the scale corresponding to the increase in tension required for each 200 pounds additional weight in the car. Occasionally, for a car which has been in use for some little time, a slight increase in tension may be found necessary, but ordinarily, once made according to directions, no further attention will be required.

Value of the Accelerator.

It seems strange that there should any longer be differences of opinion as regards hand and foot control for the throttle, yet some makers still ignore the obvious merits of the foot accelerator, and rely entirely on a hand lever on the steering wheel, remarks the London Field. The latter was only tolerable with a good governor on the engine acting independently of the hand throttle; but nowadays engines and carburetters are so flexible that the governor is usually deemed superfluous. It is here that one finds the value of the accelerator, especially in traffic or on winding and hilly roads, where much gear changing and manoeuvring are necessary. With only a hand throttle the right hand is constantly occupied in controlling the engine, when it is also wanted for the horn and the gear and brake levers. With an accelerator pedal the control is vastly quicker, neater, and simpler. The hand throttle is set for a minimum engine speed, thus acting as a governor, and all necessary power is got by a touch of the right foot on the accelerator. When the left foot declutches for slowing or gear changing, the right foot releases the accelerator and the engine is instantly governed. Thus the right and left foot balance one another, and the hands are left free for steering, horn, gear and brake levers. With professional drivers the best arrangement is to fit two separate throttles and connect the accelerator pedal to the upper one, so that if the hand throttle should be carelessly left wide open the engine cannot race when starting up or declutching.

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PARKIN IN FRONT AT TRENTON

Led all the Way in 10-Hour Grind at Interstate Fair—Rain Curtailed Event, Scheduled for 24 Hours.

A heavy rainstorm last Wednesday put a crimp in the plans of the sports managers of the Interstate Fair at Trenton, N. J., to hold a 24-hour race on the half mile track at the grounds. It had been planned to start the race at 6 o'clock in the evening, but the interference of the rainmaker made this impossible, so it was decided to reduce the time to twelve hours, starting at 9.30 a. m., Thursday, 5th inst. Even these plans went awry, and it was not until 2 o'clock that afternoon that the cars finally were started for a 10 hour race. The race was won by J .W. Parkin, Jr., of Philadelphia, driving a Walter car; Parkin covered 359¾ miles, an average of almost 36 miles an hour. Another Walter car, driven by young Edwin Walter, finished second with 347⅜ miles.

Owing to a delay in finishing some horse races, it was nearly 2 o'clock in the afternoon before the automobiles were allowed on the track, so the drivers did not have much time to acquaint themselves with the sharp turns of the half-mile oval. Six cars were sent away promptly at 2, a Thomas with Schill and Newell up; a Stearns, driven by Endicott and Coyle; a Rolls Royce, with Burns and Kugler; a Walter, with J. W. Parkin, Jr., at the wheel and his helpful father beside him; another Walter, by Walter and Wilson, and a Franklin, handled by Eisenburg and Enderbrock.

The first few miles of the race were well contested, but in the fourth mile a bolt in the clutch on the Stearns broke and it was laid up for nearly an hour, the other cars having covered 35 miles before Endicott got in the running again. In the 25th mile the Rolls Royce made an effort to pass the Walter driven by the Parkins. For five miles they raced side by side when the English car passed the Trenton candidate, but it no sooner had gained the lead than the left front tire went down and out and the Rolls Royce cut up a section of fence, and demolished a refreshment stand occupied by one W. C. Glynn. The pink lemonade merchant escaped with a slight shaking up and a bad scare. Neither Burns nor his mechanic were scratched and the car was only dented a little.

Instead of hauling the car off the track while it was being repaired, Burns and his mechanic set to work to right the damage with part of the car jutting out on the track. This raised a howl of protest from Frank A. Poth of Philadelphia, who had entered the Stearns and Thomas, and who insisted that the English car be disqualified. The other contestants were willing to overlook the breach in track etiquette made by the driver of the Rolls Royce, but Poth was obdurate and the officials reluctantly disqualified the car. At the end of the first hour the score was 40 miles for Parkins's Walter, 37½ miles for the other Walter; 35 miles for the Thomas, 31½ for the Franklin, 30½ for the Rolls Royce, and 4 miles for the Stearns.

Parkin used good judgment and kept the lead throughout, covering the first 100 miles in 2 hours 37 minutes, which is pretty fast going on a half mile track. The Thomas was handicapped by punctures. At the ending of the fourth hour Parkin had covered 147 miles and his team mate was credited with 140½ miles. The Thomas was nine miles behind the Walter and the Franklin had completed 125 miles.

From 6 o'clock until the finish at midnight nothing of unusual interest occurred. When Parkin and Walter discovered that they had the race practically won they eased the pace somewhat and jogged around at a steady clip until the gun sounded the finish. The final score was: Parkin (Walter), 359¾ miles; 2, Walter (Walter), 347⅜ miles; 3, Eisenburg (Franklin), 290¼ miles; 4, Schill (Thomas), 184 miles; 5, Endicott (Stearns), 156 3-16 miles.

Race Meet Planned for Middletown.

The Motor Club of Harrisburg, Pa., has arranged to hold a race meet at the Middletown track on Friday next, 18th inst. Following is the card of events, which has been sanctioned by the American Automobile Association: Two miles motorcycle handicap; two miles for gasolene runabouts, $1,200 and under; two miles for single cylinder gasolene cars, 1904-6; three miles handicap for steam cars; three miles for gasolene touring cars, $5,000 and under; one and one-half miles gymkhana; two miles for gasolene cars, $2,000 and under; two miles for gasolene two cylinder cars, 1904-6, $1,500 and under; two miles gasolene touring cars, $1.500 and under; two miles for steam touring cars; ten miles handicap, all gasolene cars; two miles for electric cars; unlimited pursuit for gasolene cars.

Rainy Setback for Chicago Club.

For the second time in two weeks the racing board of the Chicago Automobile Club has found it necessary to postpone its fall race meet at the Harlem track. The program scheduled for last Saturday has been held over until Saturday of this week, 12th inst., the rains of last week having made the track too dangerous for racing.

"Automobile Day" for Allentown Fair.

Seven open events and several special races for local drivers will be the feature of the Allentown (Pa.) fair on October 26th, which will be known as "Automobile Day." The program has not been arranged, but it is stated that the meet will be sanctioned by the American Automobile Asso-

OLDFIELD COPS FORT WAYNE CASH

Drives Exhibition Two Miles in Less than Two Minutes—Beats Savin in Customary Grandstand Finish.

Barney Oldfield won $100 at the Fort Wayne (Ind.) driving park track on Tuesday last, 1st inst. How much more he obtained is not known, as the amount of his appearance money is not stated, but it is certain that he pocketed the yellow century offered by the Fort Wayne Automobile Dealers' Association to the driver making the best mile under the minute mark at the race meet conducted by that association. Oldfield was the "star" of the meet and made good in his usual manner by beating his protege, Ollie Savin, in a grandstand finish in their two mile encounter. Oldfield and Savin got away to a flying start, the latter taking the lead. Oldfield let Savin set the pace until within a hundred feet of the tape, when he opened the throttle and passed his partner two feet from the tape.

Oldfield "copped" the hundred dollars by driving an exhibition two miles in less than two minutes. The first mile was covered in 58⅗, and the final in 54 seconds flat. Savin then tried to lower Oldfield's time, but failed by several seconds, making the two laps in 2:00⅗.

The stock car events were nothing extraordinary. Three motorcyclists made the first race, the event going to Harvey Hickos in 3:35 for two miles. Edward White won three of the other four events. The first was two miles for cars costing $1,000 or under and White's car led George Aldrich's under the wire in 3:28⅗. There were only two starters in the two miles for cars costing $1,500 and under and White's machine took this with ease, as it did also the three mile events following. Summaries:

Two mile exhibition—By Barney Oldfield. Time, 1:42⅗.

Two mile exhibition—By Ollie Savin. Time, 2:00⅗.

Two miles for motorcycles—Won by Harvey Hickos. Time, 3:35. Also ran—N. B. Dure and C. C. Kelly.

Two miles for cars under $1,000—Won by Edward White; second, Dr. Duemling. Time, 3:28⅗.

Two miles for cars under $1,500—Won by Edward White. Time, 3:06.

Three miles for cars under $3,000—Won by Edward White; second, William Griffin. Time, 4.32⅗.

Three mile handicap—Won by William Griffin; second, Ollie Savin. Time, 3:15.

Five mile novelty—Won by Walter McClellan; second, Barney Oldfield. Time, 9:01.

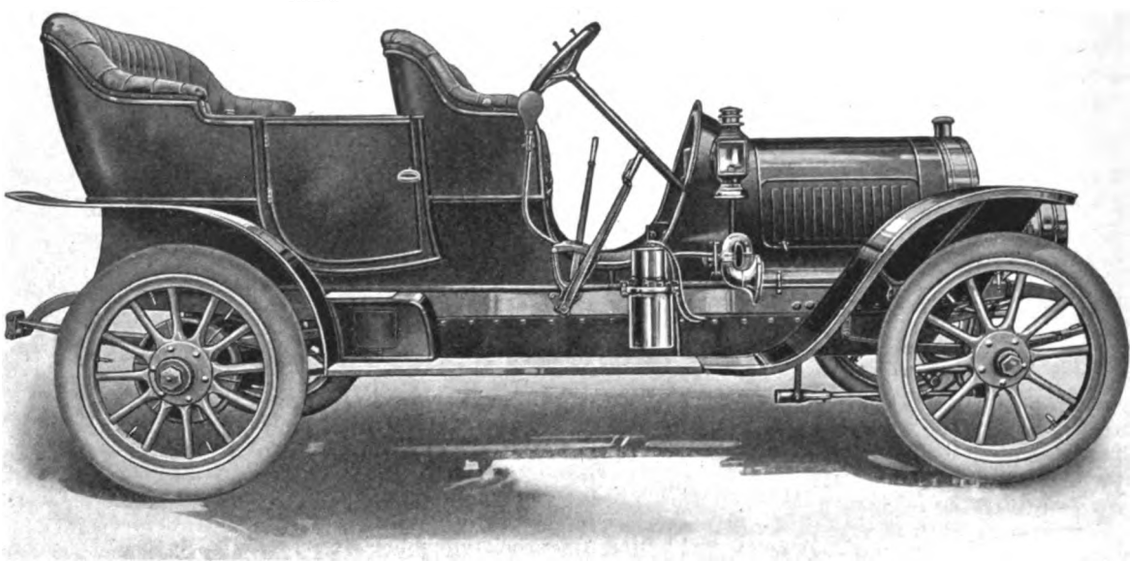
Two mile match—Won by Barney Oldfield; second, Ollie Savin. Time, 2:15.

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The Pope Hartford "30" for 1908

$2750

Says the Hartford Globe, Sunday, Oct. 6th:—
"Certain it is the new Pope-Hartford is a beauty. The lengthened wheel base, the larger wheels, longer springs; the new convex body lines, the large and roomy tonneau, with large side door; the rakish steering column with larger steering wheel, with the front axle directly under the radiator, gives the car an appearance that is at once distinctive and decidedly 'smart.'"



Changes in design and construction of the Pope-Hartford for 1908 are not of a revolutionary character. The modifications adopted tending only to further refine and bring the product thoroughly in line with the best and latest practice.

The 1907 Pope-Hartford was right. It made hill-climbing, touring, track and reliability history

The 1907 Model L is admittedly and unquestionably the speediest, most powerful, most popular and highly endorsed car in its class of the year.

Model M, its successor, has now been on the road many weeks; has been put to every conceivable road, hill-climbing, speed and reliability test.

SOME NEW FEATURES FOR 1908 ARE AS FOLLOWS:—

Selective change speed gear. Gears of Chrome nickel steel. Road wheels 34x3½ and 34x4, respectively. Wheel base 112 inches.

New carburetor giving all the flexibility of the multiple jet vaporizer. Quietness of operation of all gears. Radiator is now located directly over front axle.

The Clutch same as Model L, excepting cork inserts to the number of 34 have been added. Rear axle is now of the clutch drive type, rather than the semi-floating variety as used in the 1907 car.

The brakes, both internal and external, have been increased in surface, width and diameter. An important detailed improvement of rear braking construction is the taking of the driving and braking torque by the same member of the hub construction.

The steering column has been given a larger rake, and a much larger hand wheel is supplied.

The 1908 body has convex lines, is decidedly more roomy. Front springs are 2x38 and the rear 2x52. Aluminum guards with patent leather aprons.

Ask us to do any "stunt" you want; ask us to go where any car will go irrespective of make, price, horsepower or number of cylinders.

If you make the others, in and out of our class, do the same things under the same conditions, you'll buy a Pope-Hartford.

The Pope Manufacturing Company, *Members A. L. A. M* **Hartford, Conn.**

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ADOPTION OF THE PISTON VALVE

First Application of the Principle in Gasolene Motors of the Automobile Type —Advantages of the System.

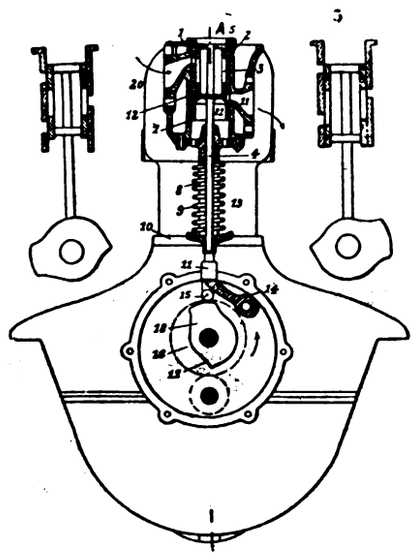
An extremely simple application of the principle of the piston valve to the requirements of the internal combustion motor of the automobile type, has lately been developed by the Peugeot company of France, constituting what is, so far as is known, the first attempt to use this sort of distributing mechanism on so small a motor. In general construction, it is of the double headed type, only the enclosure between the two heads being employed in handling the gases, the two ends being exposed to the atmosphere, and thus being more or less cooled automatically, by the natural circulation induced by their motion. A single cam serves to effect the required movements of the part, a retaining spring holding the lifter against the cam surface as with the ordinary type of valve.

The figure shows a section of a motor to which this system is applied, in which the valve is seen in the inlet position. Similarly, in the two smaller sections, the valve is shown in the neutral, or compression and ignition position, and in the exhaust position. Thus it must be evident that, contrary to the practice in controlling the ordinary valve, instead of a continuous opening or closing movement, the valve has three points of rest, one so disposed that the inlet relation will be set up, one, such that both inlet and exhaust ports will be sealed from the cylinder, and corresponding to a dwell of two piston strokes, and the third such that the exhaust may take place in the usual way.

Mechanically, the valve consists of two annular rings, closed by walls, marked 1 and 2, in the first illustration, located by means of the spacer, 3, and secured on the extremity of the valve stem, 4, by means of a nut, 6, and locking ring, 5, which hold against the shoulder, 7, on the stem. The valve rides in the sleeve, 12, in which the ports 20, 21, and 22 are cut, its stem following the guide, 8, concentric with the sleeve. It is constantly impelled toward the lower end of its travel by the spring, 9, which rests against the cylinder, 13, at the base of the guide, and at the other end, upon a washer, 10, carried by the stem itself. The lower end of the stem is carried by a rocker, 14, mounting a roller, 15, which bears against the cam, 16.

The port, 21, communicates with the cylinder, ports, 20 and 22, respectively throwing the former into communication with the inlet and exhaust manifolds. The space enclosed between the two heads of the valve, merely serves as a medium of communication between the cylinder and the two ports, serving the inlet and exhaust alternately. By suitably shaping the cam, 16, the distribution of the ordinary four-stroke cycle may be effected without difficulty. A regulating screw, 11, at the base of the valve stem, permits of adjustment for position in the sleeve, while for governor regulation, or hand control of the motor, the cam is made conical in longitudinal section, thus permitting a variation in the distribution according to the lengthwise displacement of the cam under its follower.

Obviously the chief advantages of such a system are, its simplicity as compared with



the ordinary valve gear, and the fact that it is balanced. On this account the only load on the mechanism is that due to the friction of the parts, the heavy strains obtaining ordinarily in unseating the exhaust valve against the full cylinder pressure, being quite eliminated.

Goggles and How to Test Them.

Motorists who use goggles and who complain of headaches and ill-feeling after driving, may well look to the goggle lenses as the source of their trouble rather than to put their faith in medical prescriptions or treatment. Many cheap goggles have lenses that are not entirely neutral, as they should be unless especially ground to take the place of the glasses usually worn by the driver. The effect of the cheap glass with irregularities in its surfaces or thickness is to strain the eyes as badly as if they were affected with severe astigmatism. A simple test for goggle lenses is to hold them away from the eye and move them in circles while looking through them. If the objects seen through the lenses seem to move too, it is an evidence that the glasses are not neutral and should be avoided. The best protection is the selection of goggles of known reputation, in which guaranteed neutral optical glass is used.

"The A B C of Electricity." Price 50c. The Motor World Co., 154 Nassau St., New York City.

TO PREVENT FREEZING TROUBLES

While Many Motorists "Trust to Luck," the Preventive is Simple and Effective—What It Is.

As the snow season approaches, one topic of perenial interest to the user of the water-cooled car, is that of the danger of freezing, whether or not definite steps should be taken to prevent it, and if so, what method should be employed. It is the custom with many drivers to do without anti-freezing compounds of any sort, trusting to luck to be able to keep the motor running whenever it is exposed to freezing temperatures, and relying on their own presence of mind and quick action, to drain off the cooling system in case of a breakdown involving the stalling of the motor. While this may be well enough ordinarily, it involves no little risk, and it is generally conceded that it is far better to infuse into the cooling water some substance which tends at once to lower its freezing point without materially altering its efficiency as a cooling medium.

What to use for this purpose, however, and how to use it, is rather a difficult matter to decide. All sorts of salts and solutions are recommended by various authorities, some of which are more or less useful, but more of which are distinctly evil in their tendencies. Thus one compound may tend to corrode the walls of the copper tubing through which it is led, another may eat into the rubber of the flexible connections, still another may deposit sediment and clog the fine passages in the radiator, while a fourth may volatilize and give off unpleasant or even dangerous vapors when heated beyond a certain point. On this account, it is well to use only such compounds or mixtures as are sanctioned by careful tests, rather than such as may be recommended by the casual user, or the interested dealer.

Probably the most useful as well as the least troublesome mixture which it is possible to find, is the glycerine-alcohol-water combination recommended by Souther in one of the most useful little pamphlets of its kind ever published, "The Freezing Problem Solved," published by the Motor World, and describing the method of experiment by which the correct solution was fixed upon. Briefly, the best results are obtainable by the use of alcohol and glycerine in equal parts, added to the water in the system in the ratio of about one to two. This gives sufficient resisting power to prevent any tendency to congealing of the mixture at any point higher than 10 degrees below zero, Fahr., does not tend to destroy the system in any way, with ordinary useage, does not waste rapidly, and requires only a little alcohol if the average temperature falls very low, in order to further reduce the freezing point.

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BENZOL PROPAGANDA PERSISTENT

Expert's Analysis Showing Fuel Value of the Product—Points of Comparison with Gasolene Discussed.

In Great Britain, the Benzol propaganda is being carried out with considerable force—largely for commercial reasons, and hinging about the desire of sundry refiners to build up a market for their hitherto largely waste by-product. That something is likely to come of it in the way of a fairly general use of the coal derivitive instead of the petroleum compounds, would seem to be the case, however. Several brands of Benzol are already on the market, which closely resemble one another in their properties, and their makers are using every concievable effort to get a favorable representation among the more prominent tradesmen and users. The following notes which are from the pen of Edmond Ledoux, a well known authority on fuels, relate to the qualities of "Simcar" benzol, a fuel prepared by Simon-Carves, Ltd., Manchester.

"Benzol is one of the richest bodies in carbon, and consequently requires an adequate quantity of air to obtain complete combustion without producing soot," he observes. "The physical differences between benzol and petrol are shown in the following table:

Fuel.	Benzol.	Petrol.
A Specific gravity	0.880	0.700
B Calories per litre.....	8,844	7,910
C Calories required to vaporize one kilo..	130	160
D Calories required to vaporize one litre, = A x C.....	114.4	112.0
E Calories required to vaporize a quantity having 1,000 calories of energy, $= \frac{D}{B} \times 1{,}000$	12.9	14.1

"The column 'B' shows that benzol at equal volumes contains twelve per cent. calories (or energy) more than petrol. Therefore in the storage tank of a motor car can be stored in the shape of spirit twelve per cent. more energy (or mileage) without running the tank empty.

"Column 'E' shows that to produce the same energy benzol takes nine per eent. less calories to carburate the air than petrol. It is, therefore, a better carburant, notwithstanding its heavier specific gravity. This is generally not the case with a spirit derived from petroleum or shale oil in which the heavier the specific gravity the more difficult it is to carburate the air. For instance, it has been found very difficult to use in an ordinary carburetter petrol of a greater specific gravity than .700 without having some trouble in obtaining the proper explosive mixture.

"The cost per gallon of benzol is less than for petrol. One gallon of benzol gives twelve per cent. more mileage than one gallon of petrol.

"The figures given in the above table will enable us to study the difference in the regulation which the carburetters have to undergo, according to the mode of distribution of the liquid.

"In petrol motors where the fuel is sent into the vaporiser, or carburetter, at each admission by means of a little pump, the difference in the density between the liquids has no influence, as is also the case in the Gobron motor, in which the liquid is distributed by a tap provided with grooves which deliver a constant quantity of liquid at each revolution. But in this case the capacity of the feeding pump, or of the grooves, should be decreased by about eleven per cent.—the table above shows that eighty-nine volumes of benzol will replace one hundred volumes of petrol.

"In the spray carburetters (of which the Longuemare is one of the best known) the liquid is brought into the current of air either by a central opening provided with or without a needle, or by a grooved valve which is lifted by the suction produced by the aspiration of the motor; in both cases the liquid is carried along and vaporised by the current of air. In all these carburetters the liquid is maintained at a fixed height from the nozzle of the sprayer by a constant level float, and for this reason a little regulation is necessary when using benzol with these carburetters.

"As above mentioned, the constant level is obtained by using a float which when rising checks the flow of liquid by a needle valve; the depth of the liquid in the carburetter is therefore always equal to the height of liquid necessary to lift the float. It is important to keep the level of the liquid in the carburetter at the same mark as it is constructed for; therefore if benzol is used, and as this fuel has a greater specific gravity than petrol, the float will require to be loaded by means of a washer in order to dip into the liquid to the same level. The weight of such a washer can be easily arrived at by experiment, as follows:

"Take the float of the carburetter out and dip it into petrol; mark the level it dips into the petrol. Do the same with benzol, and then add some thin washers (of copper or lead) until the float dips to the same level as in petrol.

"Or this can be arrived at by calculation as follows: Calling a the distance in millimetres between the two liquid levels on the float in petrol and in benzol calling d the diameter of the float in millimetres, the formula as under will give the weight x in milligrammes:

$$\frac{3.1416 \times a \times d \times d}{4} \times 0.88 = x$$

(The coefficient 0.88 is the specific gravity of the benzol.)

"As benzol has a specific gravity greater than petrol, the flow through a given aperture with an equal head is less for benzol than petrol. The known formula

$$V \times V = \frac{2gh\,D}{d}$$

shows that a flow of 100 volumes of petrol corresponds to a flow of only 88.9 volumes of benzol.

"By referring to the table above, it is seen that only 89.3 volumes of benzol are required to produce the same number of calories, or energy, as 100 volumes of petrol, since petrol has only a calorific value equal to 89.3 per cent. of that of benzol. Consequently it is not necessary to alter the apertures of the spray.

"In the case of the electric ignition there is nothing to change, and one can easily find the necessary advance of the spark where the motor gives the full power without knocking.

"The motor will start cold with benzol equally as well as with petrol, and the carburetter need not be heated. Benzol being richer than petrol for the same volume, it is advisable to admit more air. * * * It is unnecessary to increase the aperture of the jet. Allow a slightly greater air supply."

Text-Book on Gas Engines.

A very concise and useful text-book of the home-study order, is "Gas Engines and Producers," just issued by the American School of Correspondence, Chicago, Ill., under the combined authorship of Prof. Lionel S. Marks, and Samuel S. Wyer. The two subjects are treated independently, in separate sections of the volume, each amounting to a brief essay drawn in popular style with only so much of theory and technicality as may be required for a fair working knowledge of the processes involved. The usual chapter of history serves to introduce each section, and in both cases, the theoretical phases of thermodynamic and chemical actions are elucidated in such a way as to be comprehensible without the aid of a dictionary. The book is limited in scope by its size, however (138 pages 12-mo.) and hence is useful only in showing the way to more complete study, or as a general review of this very important branch of mechanical engineering. Gas engines, for instance, are treated very thoroughly as to their principle, and action, as well as with some regard to their practical operation; but only a limited amount of space is devoted to their specific applications to different sorts of duty. The same applies to the second section, in a general way.

Joints that Should be Kept Tight.

All connections between the cylinder and the carburetter must be tight. If any one of the joints become loose, admitting extra air, the mixture will become so diluted that the engine will skip and lose power alarmingly.

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GOVERNMENT INSIGNIA IN TRADE

Discouraging the Use of National Emblems for Advertising Purposes—How Laws Apply in the Matter.

With the great expansion of advertising the question of the use of the United States flag or of a govermental coat of arms, as a trademark, as a wrapper, or label, or for any commercial purpose whatever, has become a highly important matter.

Scveral recent decisions against such uses have called renewed attention to this question. There is a growing tendency in this country to stamp out the use of governmental symbols for the purpose of private enterprise, which seems to be quite in keeping with a wise public sentiment, says Printers' Ink.

In this we are only following in the wake of the older nations, many of whom have long had prohibitive laws in force.

As is well known the general right to property in a trademark in this country is a matter of common law. It is simply a case of original use, a merchant or manufacturer's right in a trade mark consisting wholly in his ability to establish a claim to original occupancy. This, of course, means a right in the whole trademark as such, and not to any word or mark of which it may be composed separately.

While Congress long ago passed legislation defining the colors and other details of the United States flag, it has never made any laws prohibiting or limiting the use of our national emblem. The nation was young when the flag law was passed, and it is entirely unlikely that any such conditions as have arisen with our great commercial expansion were foreseen.

The absence of a condition always implies the presence of its opposite, as silence is said to give consent. The absence of a prohibitive law thus seemed to create a privilege, which has to a greater or less extent been taken advantage of.

The present National trademark law, in one of its recently added clauses, carries the first definite limitation of the use of goveernmental insignia as trademarks. The exact language of the statute provides that no trademark which "consists of or comprises the flag, or coat-of-arms, or other insignia of the United States, or any simulation thereof, or of any State or municipality, or any foreign nation, shall be registered. Here is a very definite statute covering the situation as far as trademarks are concerned. Previous to its enactment the usage of the patent office for some years had been a refusal to register trademarks of the above character on the general plea of public policy.

The present trademark law carries a ten year proviso which, on its face, allows of the continued use of a trademark, based on or containing governmental insignia, provided it had been in actual use for ten years preceding the passage of the act. But there have been three recent and important decisions by the Court of Appeals of the District of Columbia against this construction of the law on the ground of public policy; and there is good ground for the belief that any ease involving the use of governmental or State symbols, for business purposes, which gets into the courts hereafter will be decided against, in view of these decisions which are now generally recognized as establishing a precedent.

In a recent important case in Massachusetts, the Commonwealth vs. R. I. Sherman Mfg. Co., the Supreme Court of Massachusetts held the State's right to prohibit the use of "the arms or the great seal of the Commonwealth or any representation thereof for any advertising or commercial purpose whatever." A sweeping decision which was followed by the legislative enactment, the manufacturing community being protected against loss, by being given one year to dispose of mechandise bearing the prohibited matter—the law not to take effect until that time.

A very recent decision in Nebraska, the case having gone as far as the Supreme Court, prohibited the use of the United States flag as a part of the label on a beer bottle. It will be observed that while the present National trademark law covers the trademark situation, local cases of various kinds are springing up all the time, and will continue to until each State legislature has molded and passed for itself a definitely prohibitive law with appropriately heavy penalties.

All leading foreign nations have passed prohibitive legislation against the registration of their coat-of-arms as a trademark. These are Great Britain, Germany, Austria, Hungary, Spain, The Netherlands, Sweden, Switzerland, Norway, Peru, Chili, Costa Rica, Bulgaria, Roumania, Servia, Denmark, Brazil and Japan.

"Red Can" Law Soon to Take Effect.

Michigan's "Gasolene Red Can" law, which was passed by the last legislature goes into effect on November 1st, and dealers of the fluid are hastening to provide themselves with material to comply with the provisions of the act. In short, it requires that tanks on automobiles, boats, engines, stoves, and so forth, may be filled only from cans, barrels, casks, and other receptacles that are painted bright red, and stencilled with the name of the fluid. The law makes it unlawful to put kerosene in any can or other receptacle labelled gasolene, benzine or naptha. There is an exception in the case of these inflamable fluids when sold in bottles for cleaning or similar purposes, but the contents must be designated by a label printed in red with letters not less than one-quarter of an inch in height.

COEY IN ROLE OF E. Z. MARK

Chicago Dealer Victimized by Peculiar Systems of Bookkeeping—His Forgiving Spirit Imposed Upon.

C. A. Coey, the Thomas agent in Chicago, has just awakened to the fact that he is one of the "e-z marks" of the Windy City. Some of his ex-employees thought so long ago, but they neglected to say anything about it with the result that Coey has just made the discovery for himself. Now that Coey is fully awake he is felicitating himself that he still owns a few cars. Also, he has placed his present bookkeeper under bonds, and raised his salary above the temptation point.

The trouble with two of Coey's former bookkeepers was that they led automobile careers on wheelbarrow incomes. Coey himself says so and adds that he unwittingly furnished the difference of three wheels and the gasolene. Last week he decided to quit playing the comic supplement character, hence the bonds for the new bookkeeper and a warrant for the arrest of Thomas W. Greer, a former bookkeeper.

Coey states that Greer and his predecessor, M. E. Semple, instituted systems of bookkeeping that were highly unique—so unusual, in fact, that Coey didn't remeber of ever having studied those systems when he went to school in 17—, that is, some years ago.

Last New Year's day Coey discovered that Semple had peculated to the extent of about $400. The man asked for a chance, made New Year's resolutions and promised to pay back the shortage from his salary. By March Coey managed to fathom Semple's system, so he discharged him, wishing that he had done so on New Year's day, as the shortage had grown to twice the original amount, so the dealer avers.

Then he took in Greer, or vice versa. When Coey discovered that Greer could give Semple cards and spades in figuring long on a short column, he was ready to go to the foolish factory. Greer also asked for a chance, and Coey gave it to him. Greer took a long chance, Coey alleges, so long that when he left a week ago the cash register was down and out waiting for the count.

Meanwhile Coey had given the berth to George Cheever, the young man who posed as a nephew of Vice-President Fairbanks, and in this guise procured a $5,000 touring car from Coey, which little joke ended up in the young man's languishment in jail. Coey procured the boy's release upon condition that he would work for him and pay for the damage he had caused. Cheever "worked" him, Coey relates, and now, to insure himself against further losses through his easy disposition, all his employees must give bonds.

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MAGISTRATE THREW A BOOMERANG

Pooh-Bah of Pennsylvania Town in Legal Mix-up—Prosecution of Automobilists Develops Back Action.

That a township supervisor cannot be a justice of the peace and at the same time do justice to both offices, has been discovered by Harry F. Taylor, of West Goshen township, Pennsylvania, following a decision in the Chester county courts that has attracted considerable attention from barristers of that section of the State and elsewhere, not alone from the nature of the proceedings but because also of the material effect that the decisions have upon the operation of automobiles over the public highways of the State in relation to the rights and duties of the justices and officers of the various boroughs and townships relative to the arrest of automobile owners and operators regarding alleged violations of the speed limit and failure to sound warning on approaching road crossings.

Early in the summer residents of Willistown and East Goshen townships decided that automobiles were traveling too fast through their bailiwicks, so to slacken the pace they erected warning signs relative to the speed limits. Several Philadelphia motorists were arrested and fined in Willistown township for alleged violations of the State act.

Then Harry F. Taylor, a supervisor of West Goshen township, who also is a justice of the peace, employed Worthington G. Lewis, a young carpenter, to watch the roads of that township for violations of the automobile law. On Sunday afternoon, June 30th, when he concluded there would be a large number of cars out on the road, Lewis took a station in the high grass on the Paoli road, near Goshenville school house, and in three hours jotted down the numbers of 37 or 40 cars that passed, and reported them to his employer, Justice of the Peace Taylor, as having violated the provisions of the law.

Among the number reported were several prominent business men of West Chester, among them being Charles T. McFarland, E. L. Pye, G. Glancy Wilson, H. S. Thompson, C. M. Hicks, C. G. Gawthrop and C. R. Nichols, who in a few days received a letter from Taylor to appear before him and answer to the charge preferred by "Detective" Lewis. The justice informed Wilson that from the testimony presented to him (Taylor) he was satisfied that Wilson was guilty of violating the act. Subsequently regularly prepared warrants were sworn out for a number of the alleged violators, and several of them living in Philadelphia, it is said, paid fines and costs imposed, but Wilson and others demanded a hearing. They were represented by an array of legal talent that almost flabbergasted the "learned" justice.

At the hearing given Wilson, which was made a test case for several of the others, "Detective" Lewis testified that Wilson failed to sound his horn when approaching the cross roads and his testimony was corroborated by William Armstrong, a young man who had gone up to the school house to talk over a game of base ball with a friend, and seeing some of the other persons were putting down the numbers of automobiles, he also for the fun of the thing put down the numbers of three, including that of Wilson. Armstrong testified that it was about five or six o'clock while Lewis had said that it was three o'clock. Wilson and his wife, who was in the car at the time, both testified that the horn had been sounded.

Counsel for Wilson argued that the guilt of the defendant had not been established beyond a reasonable doubt and asked for his discharge, also raising the point that the act makes no provision for a penalty for failure to sound an alarm; that no judge can sit in his own case; he had no jurisdiction in the case, being one of the supervisors who employed the prosecutor, and any judgment against the defendant would be appealed. Justice Taylor, however, imposed a fine of $15 and costs upon Wilson, without having adjudged him guilty on the testimony. Counsel at once moved for a stay of judgment or an execution, pending an appeal to the courts, and requested a transcript of the justice's docket.

Wilson's counsel filed a petition for a writ of certiorari, praying that Justice Taylor be cited into the court, and a hearing held before the body, the petition setting forth that the justice had no jurisdiction to consider the complaint against Wilson. Taylor was wholly disqualified to hear the case and judge same, because he employed the man who acted as detective, who was the complainant, and was the chief witness at the hearing; the justice employed counsel for the prosecution; the justice employed as his counsel and adviser at the hearing the same attorney whom he had employed to conduct the prosecution; the justice declared before the hearing that he had decided that Wilson was guilty of the offense charged and should be fined; that the justice had admitted that he had partially, at least prepared the case of the prosecution; that the justice refused to give the defendant the benefit of a reasonable doubt; that the defendant is not guilty and suffers much harm from the justice's decision.

When the matter came up on argument befort the court it was shown by testimony that Justice Taylor had not adjudged Wilson guilty, but merely had imposed the fine of $15 and costs. The court reversed the judgment of Justice Taylor and dismissed the proceedings, holding that the hearing before Justice Taylor was irregular and improper, as he was the prosecutor, and so the fine does not have to be paid. Lewis, the prosecutor, has now brought a complaint against Wilson on the same charge before Justice George P. Caley, of Malvern, who after hearing the testimony also imposed a fine of $15 and costs, but this case too, will be appealed to the court for a hearing.

Following the disposition of the case by the court several automobilists who have been fined by Justice Taylor have taken action to recover the fines paid him under the same irregular proceedings as was the fine imposed upon Wilson, and which the court has declared irregular. It is expected that Taylor will get into serious difficulties unless he refunds the moneys so paid, for the decision of the court in Wilson's case, which was the same as the others, reverses the judgment in all such cases.

But here is the amusing part of the case, and where the automobilists got a slap back at the justice for so zealously nabbing and fining them. While Justice Taylor was so occupied in conducting these proceedings against the motorists, he failed as supervisor of the township to properly attend to the roads, as provided by law, and he has been summoned to appear before Justice Russell at West Chester to answer charges of failure to keep loose stones off the highways of the township. And it was only a few days ago that Worthington Lewis was haled before a local magistrate to explain under what authority he acted as a detective without license granted by the court. Lewis was frightened terribly and promised to not play the amateur Hawkshaw in the future. "The automobilists can all go to blazes for all I care," was his ejaculation, and it also is thought that this will be the opinion of Justice Taylor before he clears his skirts of the mess he put himself into.

Atlantic County Withdraws Its Cops.

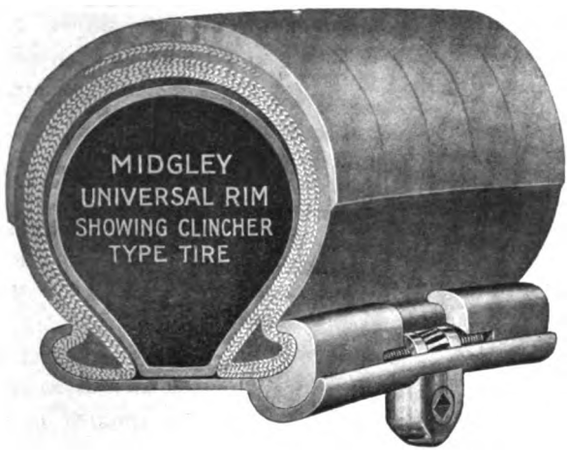
After three days of service the automobile special officers were "fired" by the the Board of Freeholders of Atlantic County, New Jersey. The director of the board had named four men to guard the roadways leading into Atlantic City, with instructions to arrest the driver of every car that appeared to be exceeding the speed limits, but there was such a vigorous protest from Atlantic City hotel proprietors that the officials were withdrawn.

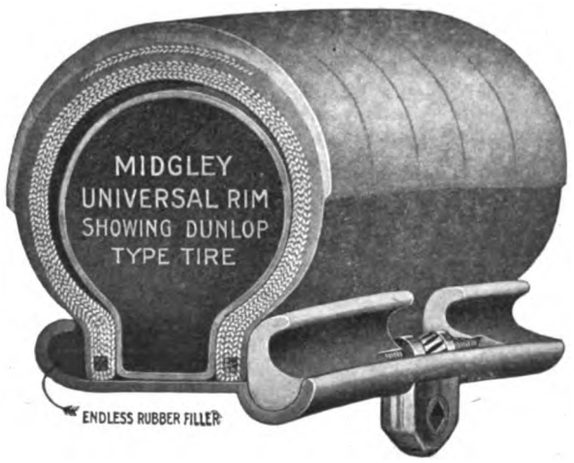
To Improve Portland-Seaside Road.

The Portland (Ore.) Automobile Club has agitate good roads to such an extent that the much-talked of boulevard from that city to Seaside will be improved. The road is fairly good with the exception of one stretch, which will cost $40,000, and the county has agreed to pay two thirds of the cost if the automobile club will contribute the remainder, which it has agreed to do.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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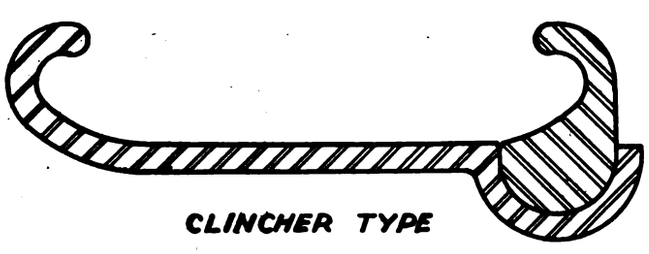
It Has Only Two Parts — **Its Nearest Competitor Has Four or More**

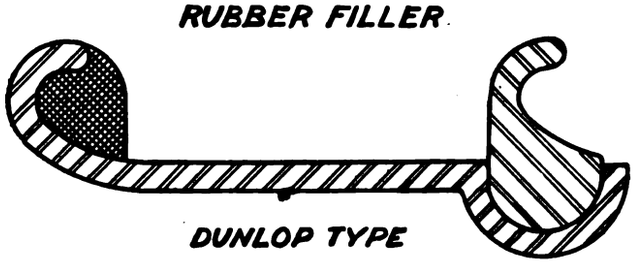
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NANTUCKET'S OBSTINATE FIGHT

Decision in Tyler Case Declares Road Closing Ordinance Illegal—Town Adopts New Law, Equally Exclusive.

Nantucket's war against the automobile is being waged with varying fortune. At the time when W. V. Birney, a summer resident of 'Sconset, at the farther end of the island, was arrested for pushing his automobile into the town a protest against the order of the selectmen closing certain roads was filed with the State Highway Commission, which gave a hearing on the matter. After deliberating from August 14 until September 18 the commission rendered a decision to the effect that the town's regulation was disapproved.

In the meantime there arose the case of Frank J. Tyler, of Boston. Tyler, who took a Maxwell touring car over to the island and drove it on the streets of Nantucket was not subjected to arrest, but got a summons to appear before Justice Mooers, which he evaded by having the magistrate summoned to Boston for a hearing before the Supreme Court to show cause why an order should not be issued restraining him from further proceedings. Nantucket won out on that issue and Tyler had to stand trial, was convicted and a fine was imposed.

This was a short-lived triumph for Nantucket. Tyler appealed from the local court to the Supreme Court and the case came up befort Judge Edgar Gray Sherman, who celebrated the twenty-ninth anniversary of his appointment to the bench by presiding at the October session of the Superior Court for Nantucket on October 1, and decided in Tyler's favor. His decree declared that the town, through its selectmen, had attempted to enlarge upon the statutes and that the special regulation excluding automobiles from the island was illegal and unconstitutional.

Nantucket recovered sufficiently from this fresh defeat to pass, through the selectmen on October 4, a new order which, while it does not exclude automobiles from all the roads of the island, which was the error made in framing the former law, is practically a shut-out for those vehicles. The order reads:

"Automobiles are hereby excluded from the following particular roads and ways in the town of Nantucket, viz: Broad street, North and South Water streets, Federal street, Centre street, Union street, Orange street, Main street and the Milestone road."

These "particular roads and ways" are the only roadways by which an automobile can either enter or reach the steamboat wharf, and the order, therefore, cuts off all possibility of reaching 'Sconset, or any other part of the island outside of the county town, that wharf being the terminus of the only ferry offering to "outside barbarians" the means of reaching the sacred soil of Nantucket. It is almost certain that a protest against the new order will be filed with the highway commission. Another thing that may be looked for is a very lively opposition to the passage by the next legislature of any such law as the people of Nantucket will ask for, enabling them to enforce such regulations.

Senator Barred from Mule Path.

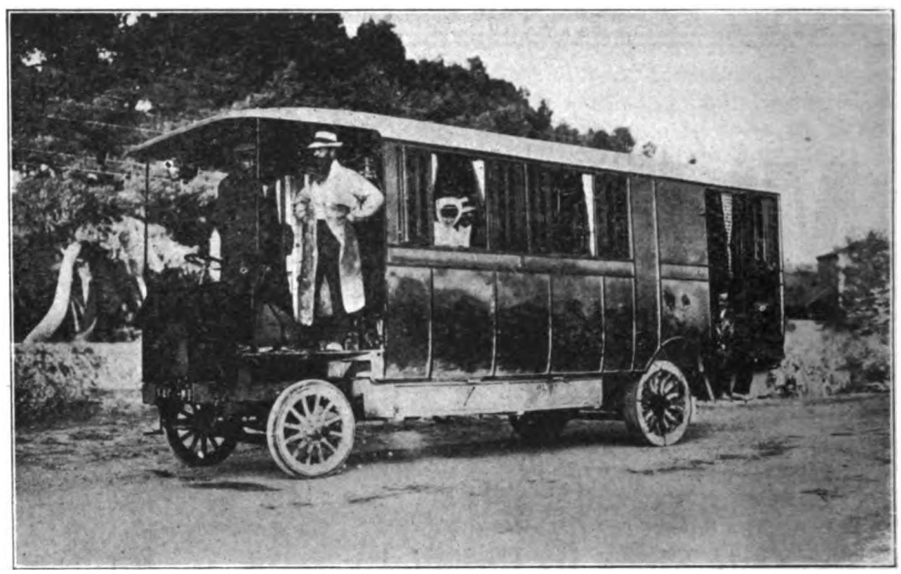
In Florida the Hon. James P. Taliaferro is a big man, and at Washington he occupies a seat in what sometimes is called the "Millionaire's Club," but which is legally known as the United States Senate. The senator has been a visitor in the Empire State recently and some of his experiences have proved to him, if he needed the proof, that even a United States Senator is not immune from the operation of state laws and regulations. With his wife and daughter and C. S. Hubbard, his son-in-law, he was making his way along a road to Albany, the party occupying two automobiles, when they reached a stretch of macadam road in progress of building near Frankfort. They were held up by an inspector who ordered them off the road, ignoring the senator's rank, as indicated by the personal card handed to him.

Then the tourists headed for the towpath of the Erie canal which parallels the road, but two state employees held them up again. In vain the senator expostulated that the road was closed to him and that he must follow the mule path in order to reach Albany that night. The card he handed to one of the men was thrown into the canal and the senator was informed that the orders of State Superintendent Stevens, prohibiting the use of the towpath as a highway "went" there against everything else. How the senator got to Albany is not material to this story, but he didn't go that part of the journey sacred to mules.

HOUSE BOAT FOR LAND SERVICE

Tourist Provides Himself a Luxurious Home on Wheels—All Conveniences of First-Class Apartments.

Motor cars built on the principle of a private railway car or a suite of rooms at the Waldorf have been attempted on both sides of the Atlantic, the latest creation of the sort being that of M. A. de Fabriques, of the Automobile Club of Marseilles, France, whose outfit is heralded as the most complete and elaborate that has ever taken the form of an automobile. The owner is at present touring all the countries of Europe with three friends and two servants, and the party is happy in its entire independence of both railways and hostelries.



LUXURIOUS PRIVATE HOTEL ON WHEELS

The car, as the accompanying illustration shows, is not unlike an elongated house on wheels. It is divided into three parts. There is a comparatively spacious dining room where eight people may sit comfortably at table and at the back there is a well arranged kitchen. The center division is for dressing rooms and toilet conveniences, as well as for storage space. At night the dining room and kitchen are converted into sleeping rooms, the former for the host and his guests and the latter for the servants. This is accomplished by means of ingenious folding beds or couches, which are not apparent in the day time. On the top of the car is a large water reservoir, with suitable piping to the kitchen, bath room and dressing rooms.

The motive power is supplied by 40 horse engine, capable of driving the car at a fair rate of speed when a move is decided upon. In an excess of zeal, the owner of the outfit declares that nevair will he to a hotel go again.

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The Week's Patents.

862,785. Vehicle Tire. William E. Andrew, Atlantic Highlands, N. J. Filed Dec. 30, 1905. Serial No. 294,009.

1. In a cushion tire, a non-pneumatic, resilient body having a plurality of symmetrically arranged longitudinal cushioniing chambers provided with flat bases and symmetrically arched tops.

862,882. Time Speed Indicator, Charles C. Coleman, Chicago, Ill. Filed Nov. 4, 1905. Serial No. 285,819.

1. In a speed indicator for vehicles, the combination of a clock, a rotary device operated by the clock, to carry a record tape, a series of projections on the rotary device to perforate the tape to indicate divisions of time, a printing device located above the rotary device, means associated with the clock for operating said printing device to make printed indications of time upon the tape in correspondence with the perforations, a cyclometer, and means associated with the cyclometer for making a series of distance indications on the tape parallel with the time indications.

862,913. Fountain Sight Feed. Christian C. Hill, Chicago, Ill.; Clotilda Barclay Hill, executrix of said Christian C. Hill, deceased, assignor, by mesne assignments, to Precision Appliance Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 23, 1904. Serial No. 238,045.

1. A fountain sight feed, comprising in combination, a trunk member, a cylindrical open side casing secured thereto, a cap screwing upon the upper end of said casing, casing and having a closed upper end and a transparent view tube arranged in said an open lower end, and a jet tube arranged inside of said view tube and attached to the trunk member, the said trunk member having an inlet passage connecting with said jet tube and an outlet passage connecting with the lower end of the chamber, substantially as set forth.

862,963. Vehicle. Charles Cretors, Chicago, Ill. Filed Dec. 27, 1906. Serial No. 439,721.

In a vehicle of the character herein described, the combination of a floor, guide tracks on the underside of said floor and near the rear end of the same, and a drawer moving on said tracks and formed with a deep rear portion and a forward shallow portion, substantially as set forth.

863,064. Friction Clutch. Herman J. Hass, Frederick P. Nehrbas, and James R. Short, Buffalo, N. Y., assignors to E. R. Thomas Company, Buffalo, N. Y. Filed Feb. 21, 1906. Serial No. 302,159.

1. A friction clutch comprising a driving shaft, a driven shaft, means for rotatably coupling or uncoupling said shafts, a driven ring connected with the driven shaft, and two driving rings connected with the fly wheel and adapted to be engaged with or disengaged from opposite sides of the driven ring, and means for holding said shafts against axial movement relatively to each other consisting of a sleeve secured to the driven shaft and provided at its front end with an external bearing flange, a sleeve secured to the hub of the fly wheel and provided with an internal bearing flange, and a row of balls interposed between said bearing flanges, substantially as set forth.

863,095. Automatic Pump for Rubber Tires. Oriel D. Rousseau, Seymour, Iowa. Filed April 5, 1906. Serial No. 310,130.

1. An automatic pump for pneumatic tires, comprising a yielding, compressible, elastic, resilient valve-chamber provided with shoulders at its ends and adapted to be mounted in and communicate with a tire as a section of the tire, valves in the ends of said chamber controlling the communication between the chamber and tire and a valve in said chamber intermediate to its ends and controlling communication between said chamber and the atmosphere.

863,124. Fender for Motor Vehicles. Dante J. Welton, Columbus, Ohio. Filed June 6, 1906. Serial No. 320,372.

1. The combination with the frame of a motor vehicle, of a resilient fender pivoted at its rear to the forward portion of the frame, and rigid vertical brackets supporting the forward portion of said fender at their upper ends.

863,142. Explosive Engine. Louis Bou deaux and Louis Verdet, Paris, France Filed Feb. 24, 1906. Serial No. 302,737.

In an explosion engine the combination of a differential cylinder a differential pis ton adapted to reciprocate within the cyl inder, an inlet and an outlet valve in communication with the lesser portion of the cylinder bore and an inlet and an outlet valve in communication with the larger portion of the cylinder bore, a plurality of explosion chambers some in communication with the lesser portion of the cylinder, and the others in communication with the larger portion of the cylinder, said explosion chambers opening into the cylinder at points immediately above the faces of the piston when the latter is at the end of its in-stroke, and an ignition device arranged in each explosion chamber.

863,145. Change Speed Gearing. Swin fen Bramley-Moore, London, England. Filed Jan. 12, 1907. Serial No. 352,045.

1. A change speed gear comprising a driving and a driven shaft in axial alignment, a sleeve encircling and supporting the adjacent ends of said shafts, a bearing for supporting said sleeve, a countershaft mounted parallel with said driving and driven shafts, a spur wheel on one end of said sleeve, a spur wheel mounted loosely on the driving shaft, a spur wheel mounted loosely on the driven shaft, a spur wheel fixed on the countershaft and in constant mesh with the spur wheel mounted on the driving shaft, a spur wheel so mounted on the countershaft that it is constrained to rotate therewith but is free to slide thereon so that it can be brought into mesh with the spur wheel on the driven shaft, a spur wheel mounted loosely on the countershaft and in constant mesh with the spur wheel on the sleeve, means for coupling the loosely mounted spur wheel on the countershaft to said shaft, and means for coupling the spur wheels on the driving and driven shafts to their respective shafts and the spur wheel on the sleeve to either or both of said shafts, as set forth.

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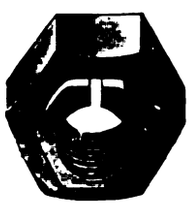
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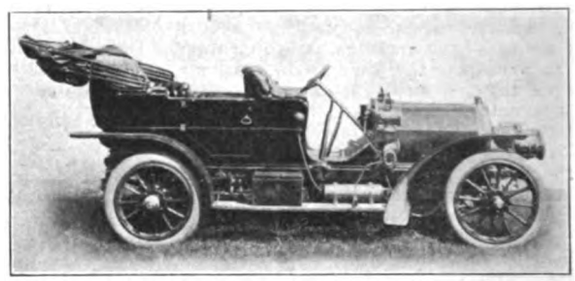
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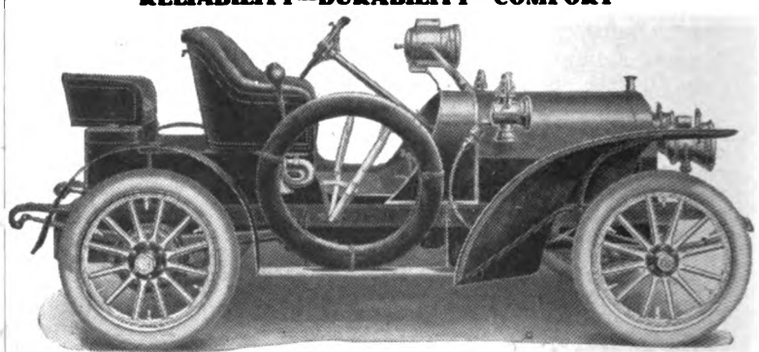
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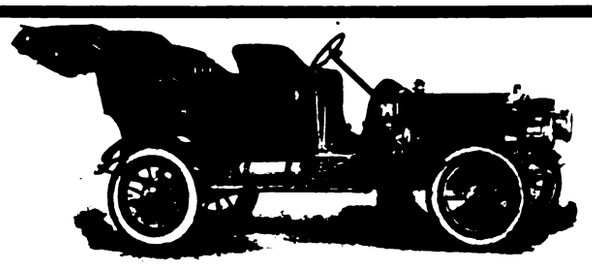
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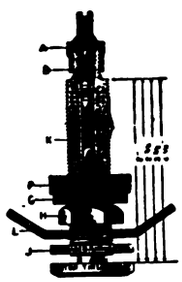
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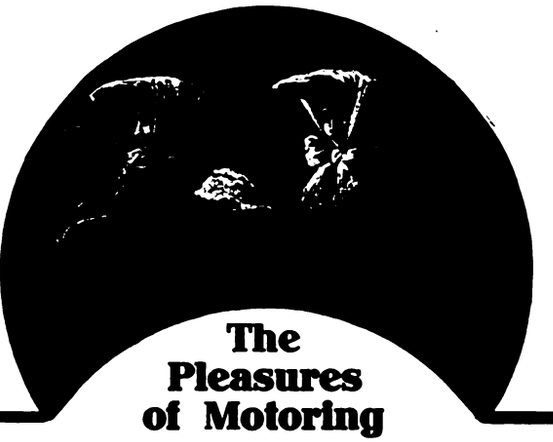
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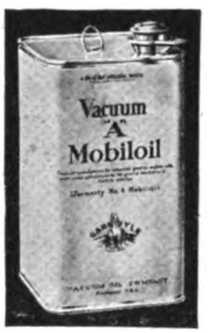
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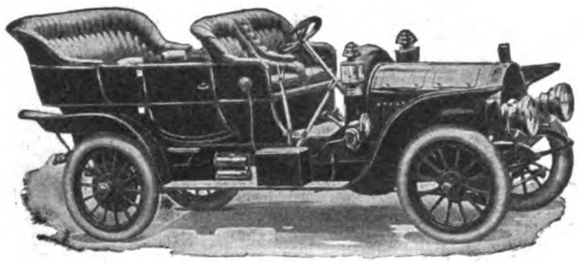
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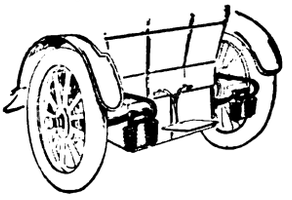


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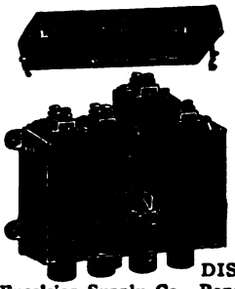
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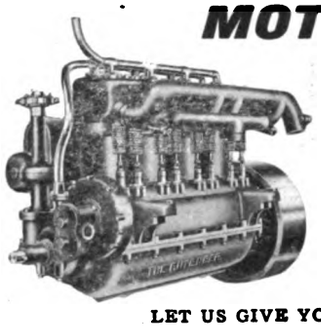
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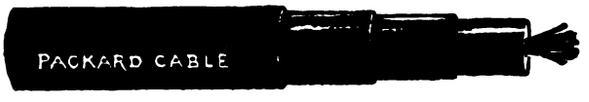
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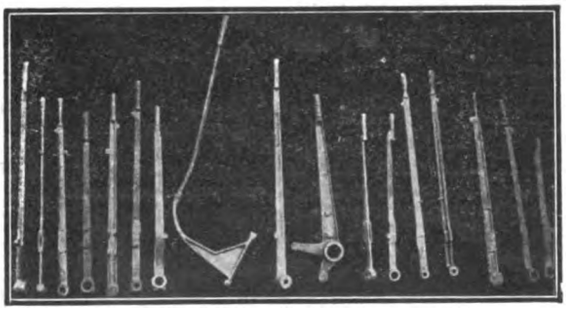
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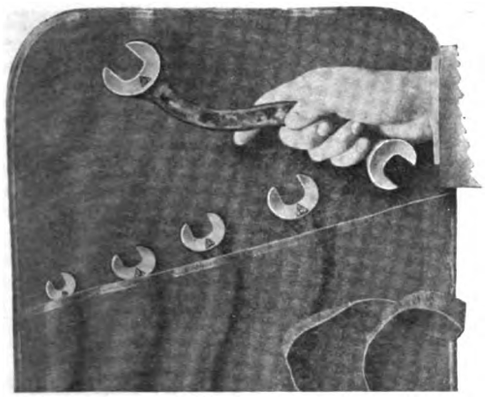
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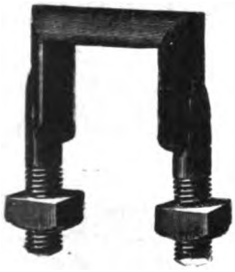
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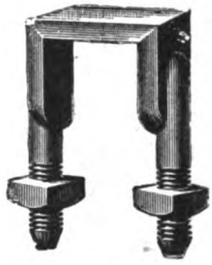
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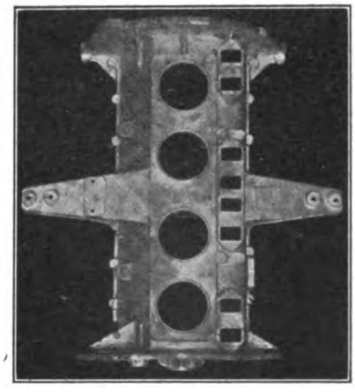
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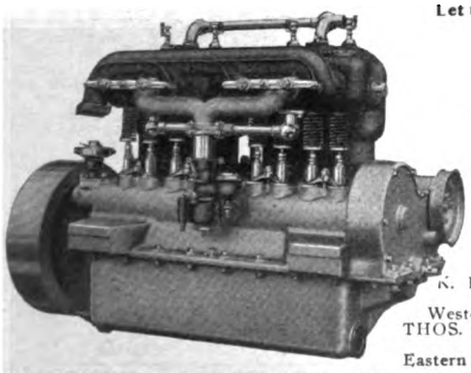
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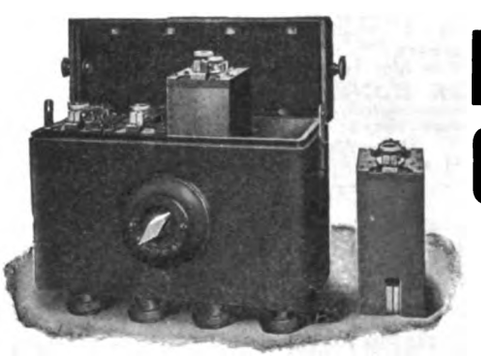
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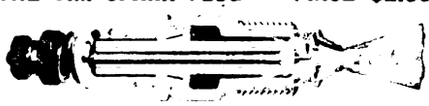
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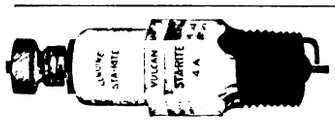
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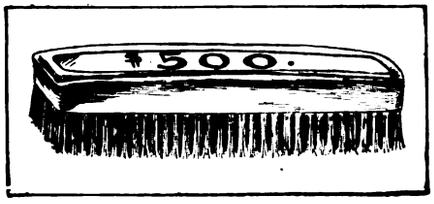
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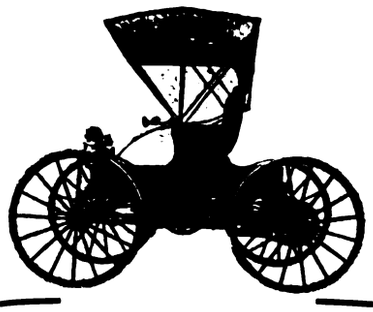
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PURITAN GAS TANKS
$30.00
Old Colony Light Company
Motor Mart, Boston, Mass.

BALDWIN CHAINS AND SPROCKETS
The Baldwin Chain Company
— MAKE —
Automobile Chains, Sprockets, Spur and Bevel Gears.
—
Baldwin Chain & Mfg. Co.,
Worcester, Mass., U.S.A.

STAMPED PARTS
FOR AUTOMOBILES
THE CROSBY COMPANY
Buffalo, New York

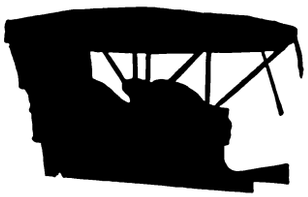
STANDARD ROLLER BEARING COMPANY
50th St. & Lancaster Ave., Philadelphia, Pa.
Manufacturers of Steel, Brass and Bronze Balls, Ball Bearings, Roller Bearings and Automobile Axles
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The Kiblinger
automobile is now recognized as a practical, reliable car for commercial purposes as well as for pleasure. For the service of physicians, rural letter carriers and many other lines it has no equal. ¶ Our double-opposed cylinder 9-10 H. P. machine will negotiate any roads over which any other car can be driven. Price, $375. We want reliable agents in unoccupied territory.
Write today for Catalogue and Novelette
W. H. KIBLINGER COMPANY
Box No. 250 AUBURN, IND.

1907 WHITLOCK COOLERS
Manufactured by
The Whitlock Coil Pipe Co.
Hartford, Conn., U. S. A.
Will be the standard for high grade cars. We are now closing contracts for 1908.

Springfield Top
(Pat. 1895)
ALUMINUM BODIES.
Springfield Metal Body Co.,
300 Birnie Avenue, Springfield, Mass.



Dolson The Car of Power
60 H. P. 7 Passengers. $3250

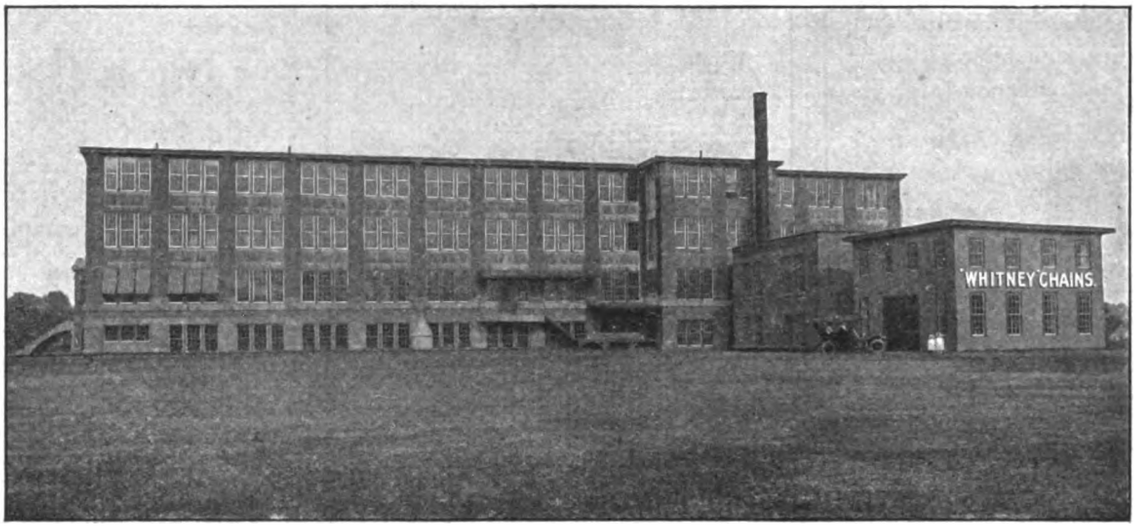


Gilbert Supplies
THE ONLY ONES WORTH HAVING
Catalog on Request
GILBERT MFG. CO.
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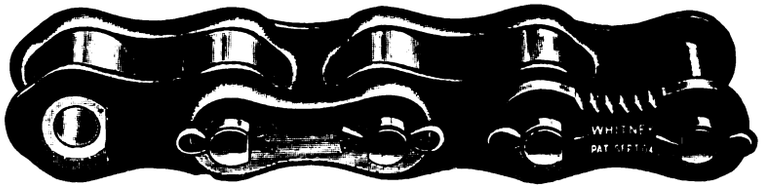
INVESTIGATE
The Great Smith Car
SMITH AUTO. CO., MFRS.
TOPEKA, KANSAS

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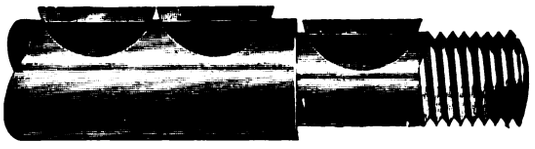
New Fireproof Factory
New Machinery and Improved Methods



No Automobile Chain has averaged better than the "Whitney," and for the season of 1908 no chain manufacturer has made such extensive preparations and improvements as the Whitney Co.



"Whitney" Chains
and the
Woodruff Patent System of Keying
are used by the leading American automobile manufacturers.



THE WHITNEY MFG. CO., Hartford, Conn.

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WINTON

"That's The Finest Ride I Have Ever Enjoyed."

Must be a lot of merit in the new Winton six-cylinder Six-Teen-Six to draw praise like that from veterans of the steering wheel—men who have had ones, twos and fours, air-cooled, water-cooled, two-cycle, four-cycle, steamers, electrics and gasolines. Must be a pretty smooth automobile.

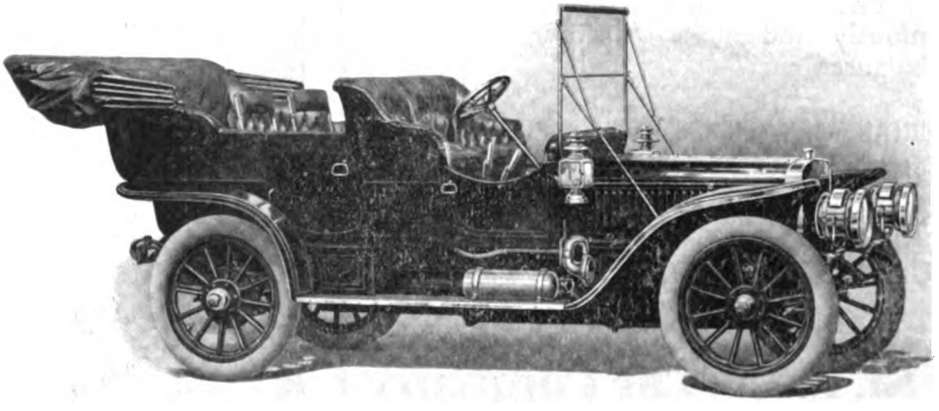
We leave it to you, whether it is or not. Try in on the hills—the worst hills you can find, and see it conquer them. Try its speed, and mark if anything gets by. Get into crowded traffic and observe how it creeps cautiously along on the high speed and springs merrily through the first opening. Compare it critically with the best motor car you or your friends have ever owned, and then you'll want a Six-Teen-Six.

Goes The Route Like Coasting Down Hill. Rides like a palatial yacht on a smooth sea. Starts from the seat on compressed air. Ideal in all that makes a motor car worth while, from appearance to performance Output limited to 500 cars, making it the Exclusive Car for 1908. Purchase price includes five bow top, full set of lamps, gas tank or generator, horn, tools and glass front. Made by the only company in the world whose entire plant produces six-cylinder cars exclusively.

$2500 in Gold
For Ten Good Chauffeurs

First Award	$1,000
Second Award	$500
Third Award	$250
Fourth Award	$150
Six Others	$100

A plan to benefit owners as well as drivers. Ask us about it.



THE WINTON MOTOR CARRIAGE COMPANY

CLEVELAND, OHIO, U. S. A.
Member A. L. A. M.

NEW YORK	PHILADELPHIA	CHICAGO	SEATTLE
BOSTON	PITTSBURG	DETROIT	SAN FRANCISCO

At the Madison Square Garden Show, New York, November 2-9.

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"American Mors"

THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

GUARANTEED FOR ONE YEAR

Send for our Catalog. Address Dept. H

The St. Louis Car Company

Automobile Department, St. Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

The Ford Line For 1908

AS PER USUAL, will eclipse everything else.

AGENTS ARE ANXIOUS to learn what it is to be—so are our copyist competitors, and we are not telling.

ALL THE PRESENT MODELS will be retained—every one is a world-beater in its class;—not one, has a rival today; nothing others can bring out in 1908 can possibly compete in quality and price.

THE FORD SIX—the car that made the fame of sixes and compelled 27 unwilling makers to follow its lead, will still be made in the two types—the 40 horse power touring car and the "6-40" Gentlemen's roadster. Finish a trifle better, and price a trifle higher perhaps, but otherwise the same as '07.

MODELS "N & S" RUNABOUTS cannot be improved upon. Both are now standard products.

THERE'LL BE ONE new runabout—a light roadster that will show the way to everything else on wheels, quality, price. performance and appearance beyond compare.

TWO OTHER SURPRISES—yes, a light touring car is one of them—that will be the delight of prospective buyers, the despair of competition.

SEE THEM ALL AT THE A. C. A. SHOW: You'll say "the world is Ford's for 1908."

In line for the agency yet?

FORD MOTOR CO., 259 Piquette Avenue DETROIT, MICH.

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Locomobile

1908

The Pioneer American High-Class Gasolene Car with six years' improvements. For those who require FREEDOM-FROM-TROUBLE; ABSOLUTE-SAFETY; and MAXIMUM-DURABILITY—THRUOUT

THE NEW "20" — Five-passenger touring car. Price $2900. Four speeds, selective. 102-in. wheel base. "20" Limousine has 116-in. wheel base. Price $4200.

THE NEW "40" — Seven-passenger touring car. Price $4750. Four speeds, selective. 123-in. wheel base. 36-in. wheels. Motor develops about 60 H. P.

Locomobile Dealers

ALBANY, Taylor Automobile Co.
AMSTERDAM, N. Y., Wm. Dave.
BALTIMORE, MD., Callahan, Atkinson & Co.
BIRMINGHAM, ALA., W. T. Harrison Co.
BRISTOL, CONN., J. B. Sessions.
BROCKTON, MASS., W. H. Marble.
CHARLES CITY, IA., B. A. Stevens.
CINCINNATI, O., Hanauer Auto Co.
DAVENPORT, IA., Buck Auto & Implement Co.
DECATUR, ILL., Geo. W. Ehrhart.
DES MOINES, IA., Iowa Auto & Supply Co.
ELKHART, IND., G. B. Pratt.
ESSEX, CONN., O. N. Beebe.
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GREENWICH, CONN., Allen, Asten & Co.
GRAND RAPIDS, MICH., Dudley E. Waters.
HAVANA, CUBA, German Lopez.
HOUSTON, TEX., Mosehart & Keller Auto Co.
LOS ANGELES, CAL., Success Auto Co.
MARLBORO, MASS., Frank Billings.
MIDDLETOWN, CONN., T. M. Russell.
MILWAUKEE, WIS., Schreiber Motor Car Co.
MEXICO CITY, Compania Vehiculos Electricos.
MINNEAPOLIS, MINN., Jordan Auto Co.
NEW BEDFORD, MASS., S. C. Lowe Supply Co.
NORWALK, CONN., F. E. Lockwood & Co.
NEW HAVEN, CONN., Auto & Supply Corporation.
NEWARK, N. J., Greene Motor Car Co.
NEW ORLEANS, Automobile Company.
PROVIDENCE, R. I., Davis Auto Co.
PITTSBURG, PA., Fort Pitt Auto Co.
PORTLAND, ORE., Covey & Wallace Motor Co.
READING, PA., Penn Auto Co.
ROCHESTER, N. Y., U. S. Auto Co.
SAGINAW, MICH., Norris Auto Co.
SPRINGFIELD, MASS., Springfield Auto Co.
ST. LOUIS, MO., Capen Motor Car Co.
SAN FRANCISCO, CAL., F. G. Miner.
TAUNTON, MASS., Carlow Auto Co.
WILKESBARRE, PA., Wyoming Valley Motor Car Co.
WASHINGTON, D. C., Luttrell Co.
WATERBURY, CONN., E. H. Towle Co.
WICHITA, KAS., A. S. Parks.
YONKERS, Yonkers Auto Station.

Applications for open territory may be sent to factory or to the nearest Branch Office

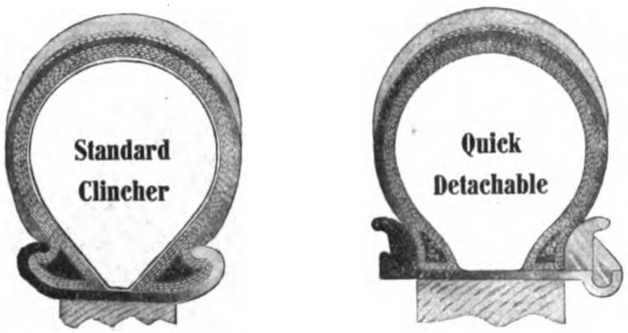
The Locomobile Company of America, Bridgeport, Connecticut

BRANCH OFFICES

NEW YORK, Broadway and 76th St.
PHILADELPHIA, 245 No. Broad St.
BOSTON, 400 Newbury St.
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Members Association of Licensed Automobile Manufacturers.

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FOR PLEASURE CARS

Your 1908 Car

can just as well be equipped with superior tires as ordinary ones and at no additional expense to you, if you specify and firmly insist upon

"Firestone" TIRES

They are a little more expensive to the automobile manufacturer, but he will put them on for you if you firmly insist.

There is not a tire on the market to-day that is made of as good materials as FIRESTONE Tires. That is one reason why they cost a little more and serve a great deal better.

Specify Them! Insist Upon Them!

The largest exclusive rubber tire makers in America

Firestone Tire & Rubber Company

Factory and General Offices, Akron, Ohio

NEW YORK BOSTON PHILADELPHIA CHICAGO
ST. LOUIS DETROIT BUFFALO, PITTSBURG

FOR COMMERCIAL CARS

SIDE-WIRE



MOTOR TIRE

Made in both Single and Dual forms

The Recognized Standard Equipment

EIGHTH NATIONAL

Automobile Show

November 2 to 9, 1907

Madison Square Garden

UNDER THE DIRECTION OF THE

Association of Licensed Automobile Manufacturers

The following Standard **GASOLINE** Cars, licensed under the Selden Patent will be exhibited:

Apperson	Locomobile	Royal Tourist
Autocar	Lozier	Alden Sampson, 2d.
Buick	Matheson	Selden
Cadillac	Northern	Stearns
Corbin	Oldsmobile	Stevens-Duryea
Columbia	Packard	Studebaker
Elmore	Peerless	Thomas
Franklin	Great Arrow	Thomas Detroit
Haynes	Pope-Hartford	Waltham-Orient
Hewitt	Pope-Toledo.	Walter
Knox	Pope-Tribune	Winton

ELECTRIC

Babcock	Rauch & Lang	Pope-Waverly
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Baker	Woods	

STEAM

White

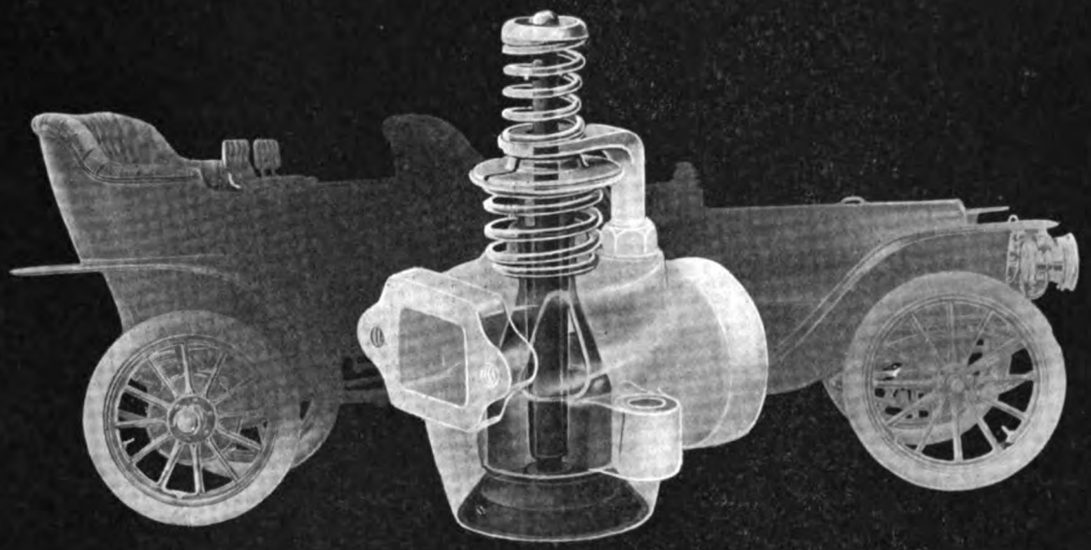
Full Exhibit by The Motor and Accessory Manufacturers
Incorporated

FIRST COMPLETE EXHIBIT OF MOTORCYCLES

Unequalled Display of Commercial Vehicles

Admission 50c. Tuesday and Thursday, $1.00

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Franklin Concentric Valve

The long-sought-for invention which engineers had given up as "impossible." It greatly increases power without increasing weight.

The "impossible" made possible.

The crowning success of motor-car engineering.

The final step in high power and light weight.

Send for de luxe catalogue of Franklin models.

16 h. p. Touring-car $1850; Runabout $1750
28 h. p. Touring-car or Runabout $2850
42 h. p. Touring-car or Runabout $4000
Landaulets and Limousines.

Prices f. o. b. Syracuse.

H H Franklin Mfg. Co., Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers.

FRANKLIN

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1908 **1908**

THOMAS

Thomas 4-20 Town Cars

Runabouts, Broughams, Cabriolets, Limousines, Landaulets and Doctor's Cars

$2500 to $3250 F. O. B. Buffalo

Reliability **Comfort**

Thomas 4-40 Detroit

Runabouts, Tourabouts, Touring Cars and Limousines

$2750 to $3750 F. O. B. Detroit

Thomas 4-60 Flyer

Runabouts, Tourabouts, Touring Cars, Limousines and Landaulets

$4500 to $5700 F. O. B. Buffalo

Reserve Strength **Reserve Power**

Thomas 6-70 Special

Runabouts, Touring Cars, Limousines and Landaulets

$6000 to $7200 F. O. B. Buffalo

CATALOGUE AND SPECIFICATIONS ON REQUEST

E. R. THOMAS MOTOR COMPANY

BUFFALO, N. Y.

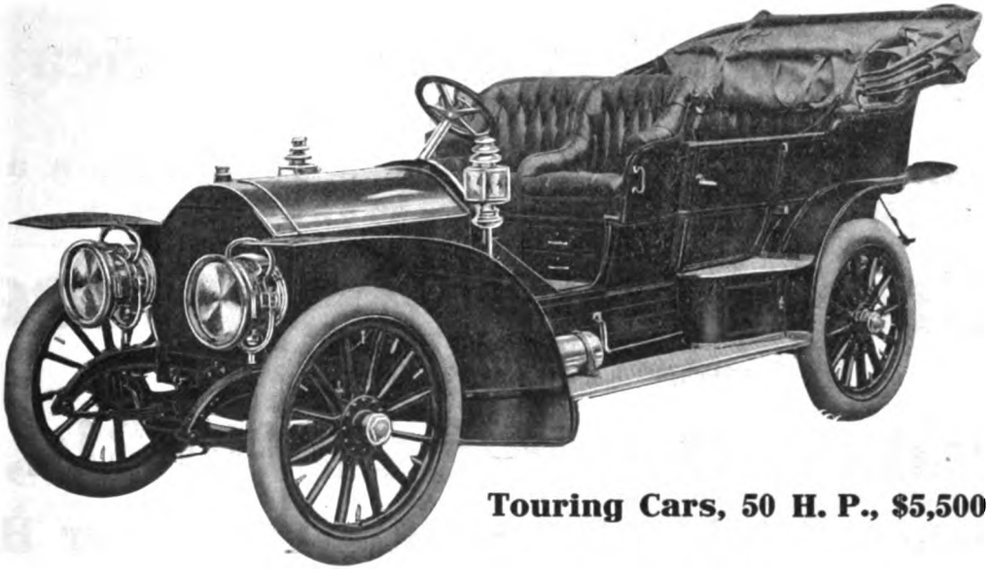
Member A. L. A. M.

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Licensed under Selden Patent

Matheson

Guaranteed One Year

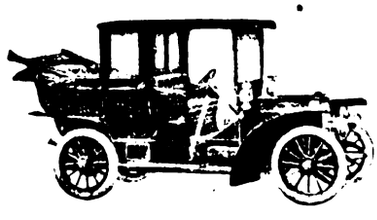


Touring Cars, 50 H. P., $5,500

THE MATHESON is standardized. The few changes for 1908 are unimportant refinements. The great string of Matheson victories during the past season, its new speed records, hill-climbing records, endurance records, its perfect scores galore in reliability contests, made, not only without need of repairs, but without even adjustments, all these have repeatedly proven to us that there is no room for improvement in the Matheson. We have sought in vain for records of performance that would show the need of improvement of even a single feature. Feature for feature through the world's output of high powered cars, there is nothing that can compare with the Matheson for performance over American roads.

This means that the motorist who puchases a Matheson today will have, years hence, a car which will be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. The Matheson is so strong, so swift, so powerful, so simple, so economical, so luxurious, so beautiful, so utterly without a peer, that no use of ink and paper can convey to you its greatness in entirety. Write for our new booklet, "I Drove My Matheson," by Matheson owners, some of whom have driven 5,000 mile trips at an upkeep cost of 5 cents—some for less.

Immediate Deliveries
Limousines, Landaulets
50 H. P., $6,500



Palmer & Singer Mfg. Co.
(Formerly Matheson Co. of New York)
1619 Broadway, New York
Telephone, 4876 Columbus

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EIGHTH ANNUAL

Automobile Show

OF THE

Automobile Club of America

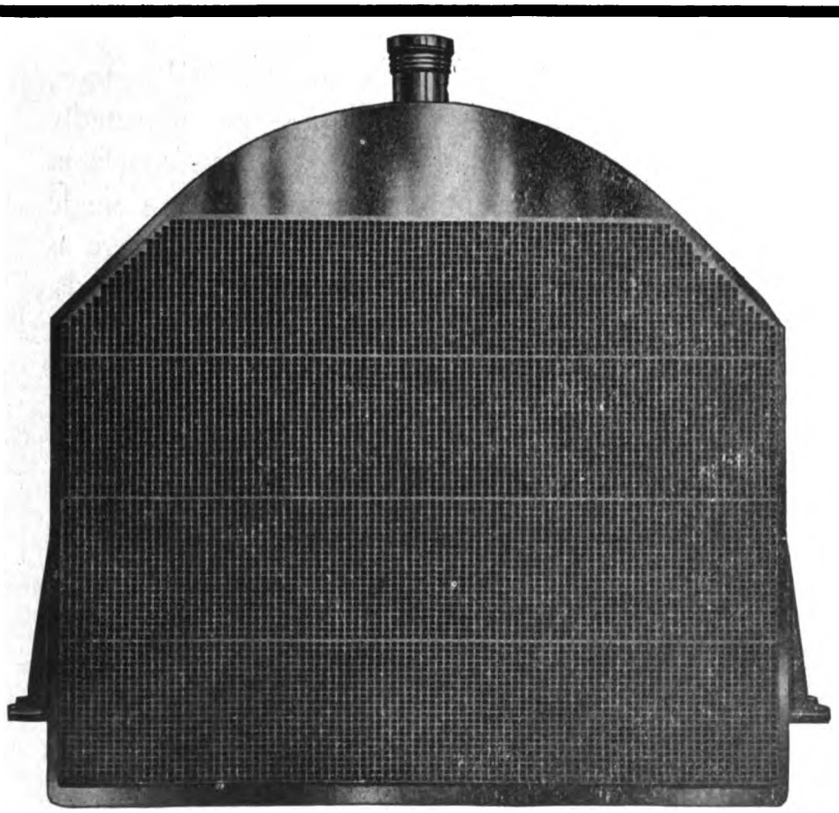
Participated in by the
American Motor Car Manufacturers' Association and the
Motor and Accessory Manufacturers

Grand Central Palace

Lexington Avenue and 43d Street

Thursday, October 24th to 31st, 1907

Greatest Exhibit of American Cars Ever Held



¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

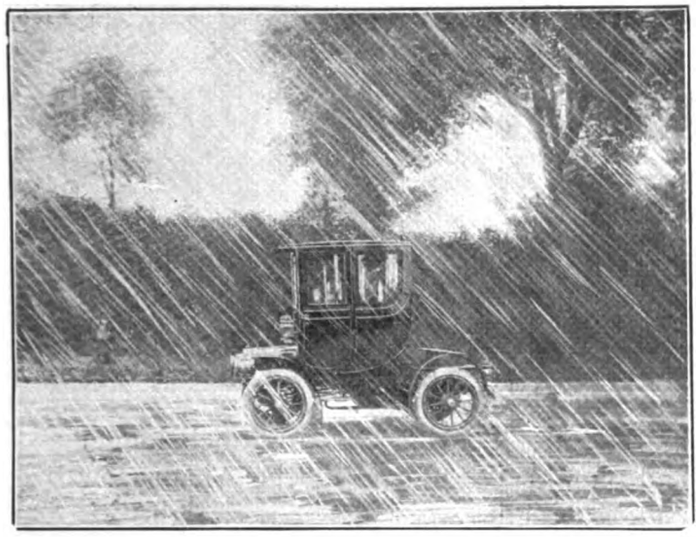
¶ **The Mayo Radiator** is **The Quality Radiator.**

¶ If you are a **Quality Maker** better write us at once.

HONEYCOMB, CELLULAR
OR FLAT TUBE TYPES.

MAYO RADIATOR COMPANY, New Haven, Conn.

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Rain or shine its all the same in the Cadillac coupe.

$1350 F. O. B. DETROIT

THE IDEAL PHYSICIAN'S CAR.
THE IDEAL SHOPPING CAR.
THE IDEAL OPERA CAR.
THE IDEAL CAR

for any purpose where a two passenger enclosed motor vehicle is desired.

The Cadillac coupe comprises our regular Single Cylinder Chassis with an enclosed body.

It is suitable for every day in the year, warm or cold, rain or shine, for city streets or country roads. In cold or inclement weather the occupant is almost as well housed as he would be at his fireside. In pleasant weather the front and rear windows may be lowered and the side windows opened, permitting ample air circulation.

If desired, the coupe body can be removed and the regular runabout body substituted for use during the summer.

This

Cadillac

with its gasoline motor, has many advantages over cars using other methods of propulsion. There are no noxious odors. You may replenish the tank with gasoline almost any place and be on your way in a few minutes.

The Cadillac coupe is luxuriously upholstered and trimmed and richly finished both inside and out. It has every mark of dignity and refinement, with the pre-eminent Cadillac characteristics of thorough dependability and economy of maintenance.

Cadillac dealers can make prompt delivery.

Ask us for Special Coupe Booklet and descriptive catalog.

CADILLAC MOTOR CAR COMPANY, Detroit, Mich.

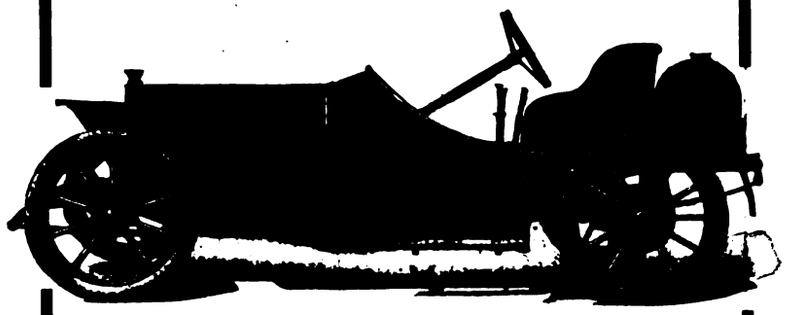
Members of Ass'n Licensed Auto. Mfrs.

Cadillacs will be exhibited in New York at Madison Square Garden only, Nov. 2-9.

DRAGON

1908 Roadster

35 H. P., $1850

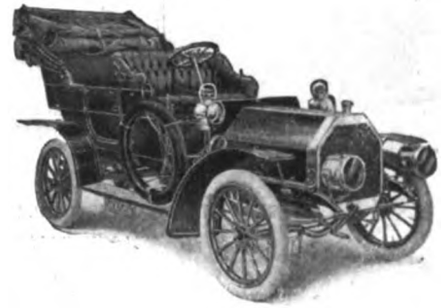


Exhibited at the Independent Show, Grand Central Palace, New York City, October 24 to 31

Four 4½ x 4½ inch cylinders, cast in pairs; valves on one side; progressive type transmission, located on rear axle; I beam drop-forged front axle, roller-bearing rear axle; 96-inch wheel base; drop frame of pressed steel; storage battery ignition; speed up to 55 miles an hour; weight 1,800 lbs.; cone clutch, leather-faced; brakes, 14-inch drums, metal to metal internal and external; ball-bearing front axle and gear box; Diamond tires 32 x 3½ inches. The price includes full equipment of five lamps, horn and tools.

The Dragon Touring Car of 1908

The success of our 1907 touring car has induced us to put a similar model on the market for 1908, embodying all the good features of the 1907 car, together with such improvements and refinements as have been found desirable and necessary. It has all the advantages of correct design, fine workmanship, absolutely best material, handsome appearance and perfect performance on the road. Excessive speed was not the object in designing the Dragon, but it will take you forty miles an hour when you care to travel that fast. Write for information.



24-26 H. P., five passenger, full elliptic springs, wonderfully easy riding, silent shaft drive, double hub brakes—$2,100 f. o. b. Philadelphia.

The Dragon Automobile Co.

30th, 31st and Chestnut Streets, Philadelphia

Member A. M. C. M. A.

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Announcing The Marmon 1908 Models

Air-Cooled and Water-Cooled

IT HAS long been a matter of common knowledge among automobile experts that the Marmon offers more distinctive features of marked mechanical excellence than any other car.

We offer this season the culmination of progressive design and thorough construction in two strikingly beautiful models.

We offer, with increased confidence, the latest improved Marmon Air-Cooled Motor, which for many years has proven its efficiency under all conditions of hard service.

One of the new features of this remarkable motor is the Marmon One-Piece Detachable Cylinder Head, removed or replaced in a moment, dispensing with valve cages entirely, reducing engine noise to a minimum, and making the valves, pistons and cylinder walls easily accessible.

To those who prefer water-cooling, we offer the Marmon Water-Cooled Motor of latest approved design, which, like the Marmon Air-Cooled Motor, is built and fully warranted by this house.

Marmon Touring Cars are much longer and roomier this year. The body hangs low and is designed in a gracious straight-line effect.

All models embody the exclusive features which have won the Marmon its fame for mechanical superiority, such as Double Three Point Suspension, Marmon Lubrication, Roller Bearing Steering Column, Marmon Multiple Disc Clutch with Cork Inserts and Marmon Selective Transmission.

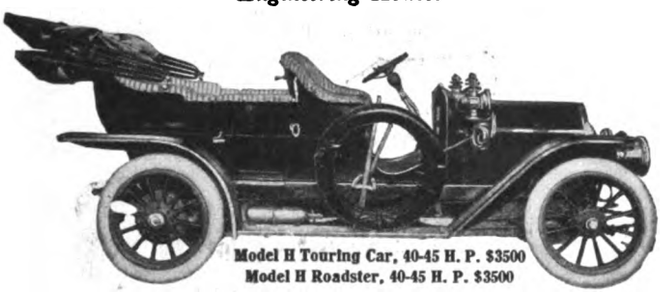
These and other distinct advantages in a car of exceptional quality and high repute cannot fail to convince the man who wisely seeks real mechanical merit in a mechanical product.

A full description of all models will be furnished promptly by Department 12.

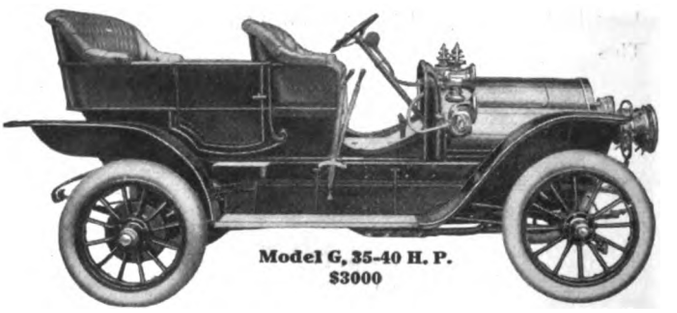
"A Mechanical Masterpiece"

The Easiest Riding Car in the World

Built by one of the World's Best Known Engineering Houses



Model H Touring Car, 40-45 H. P. $3500
Model H Roadster, 40-45 H. P. $3500



Model G, 35-40 H. P.
$3000

The Marmon account for 1908 offers a very attractive proposition. We have some open territory for first-class agents.

Nordyke & Marmon Co.

(Established 1851) **Indianapolis, Ind.**

Member American Motor Car Mfrs. Association

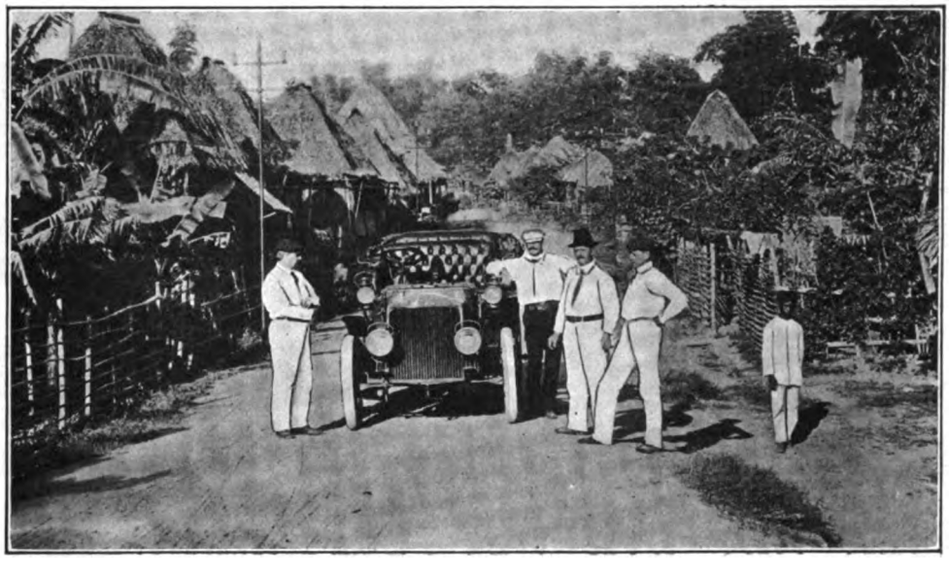
At GRAND CENTRAL PALACE SHOW
NEW YORK
At COLISEUM SHOW, CHICAGO

FOR SALE BY—New York City, Theo. E. Schulz, 1843 Broadway; Chicago, Ill., Maxwell-Briscoe-Chase Co., 1407 Michigan Ave.; Boston, Mass., F. E. Wing Motor Car Co., 12 Columbus Ave.; Philadelphia, Pa., Brazier Auto Works, 38th and Market Sts.; Baltimore, Md., Snodeal Automobile Co., 2552 Madison Ave.; East Orange, N. J., Rickey Machine Co., 92 Eaton Place; St. Louis, Mo., Van Automobile Co., 706 Washington Ave.

FOR SALE BY—Pittsburg, Pa., Pennsylvania Auto Co., Hay St. and Kelly Ave., Wilkinsburg; Binghamton, N. Y., Heller-Spawn Motor Car Co.; Waterloo, N. Y., Waterloo Automobile Co.; Los Angeles, Cal., C. S. Anthony, 440 W. 33d St.; Milwaukee, Wis., John Ure, Jr., & Co., 172 12th St.

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THE INCOMPARABLE
WHITE
THE CAR FOR SERVICE



A SEASON OF WHITE VICTORIES

White Bulletin No. 14, which has just been issued, gives a resumé of the victories of the White in the important contests of the year. The various chapters of the Bulletin bear the following headings:

The White in World-Wide Use
The President at the Wheel
Continued Government Favor
First Place in Loudon Town Carriage Contest
Perfect Score in Harrisburg Endurance Run
Fastest Time in Wilkes-Barre Hill-Climb
Fastest Time in Cleveland Hill-Climb
Fastest Time in California Hill-Climb
Perfect Scores in Sealed Bonnet Contest
Officially Observed Non-Stop Run of 1871 Miles
Only Perfect Score in Quaker City Regularity Run
Fastest Time of the Season on the Track
Perfect Score in California Endurance Run
Officially Declared Most Efficient Car
Wins Third "Desirability Contest"
The Glidden Tour—A Clean Sweep for the White

Write for a copy of this interesting publication.

THE WHITE COMPANY
CLEVELAND, OHIO

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The ad on the opposite page
states a plain truth about the success of Morgan & Wright Tires

A *National* PROPHECY FULFILLED

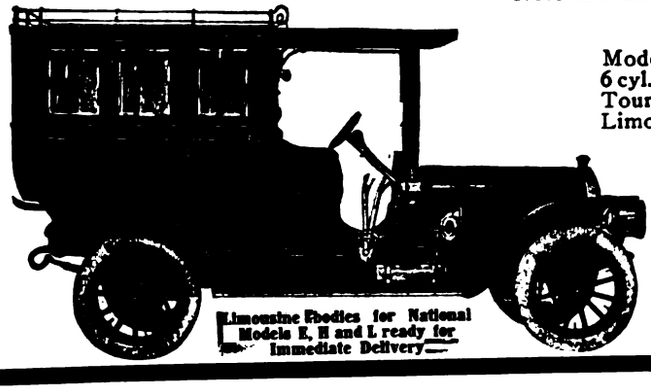
In the Fall of 1905, when we brought out the

First Stock Six Cylinder Car Made in America

we stated in our advertising

THAT IT WAS "An Innovation in Touring Cars"
THAT IT WAS "A car very much ahead of the times"
THAT IT WAS "A car which would be extensively copied in the near future"

Note the number of manufacturers who are NOW building six cylinder cars.



THE 1908 NATIONAL LINE

Model T,	Model R,	Model N
6 cyl. 75 H. P.	6 cyl. 50 H. P.	4 cyl. 50 H. P.
Touring car.	Touring car.	Touring car.
Limousine.	Limousine.	Limousine.
	Roadster.	Roadster.

At the New York Show, Grand Central Palace, Oct. 24 to 31.

Write for Catalogue and Booklet
"WHAT OWNERS SAY ABOUT THEIR NATIONALS"

NATIONAL MOTOR VEHICLE CO.
1007 E. 22d Street, Indianapolis, Ind.
Member American Motor Car Mfrs. Ass'n, N. Y.

To keep posted, read
THE MOTOR WORLD

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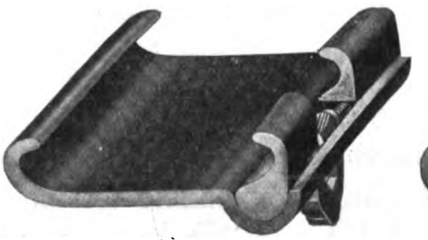
MORGAN & WRIGHT TIRES have won a commanding place in the tire field thru persistent making good

We want to emphasize that word "won."

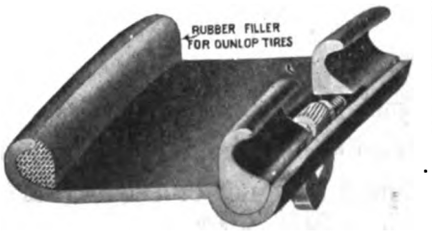
It requires an entirely different kind of a tire to win business than it does to secure it. It is one thing to sell a motorist one set of tires, but it is quite another —and a bigger—thing to sell him a second set of the same kind. Salesmanship may sell the first set, but merit must sell the second.

And it is by this merit method that MORGAN & WRIGHT TIRES have won their way to prominence in the "auto game."

Tough rubber stock, superior-grade fabric, our method of tire building, and perfect vulcanization—this is the "compound" that makes up into GOOD tires.



FOR CLINCHER



FOR DUNLOP
(Note rubber filler in clincher on left.)

The Improved Midgley Rim, illustrated above, accommodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.

MORGAN & WRIGHT, DETROIT

Branches and Agencies

New York:
214 W. 47th St.,,
17 Warren St.

Chicago:
81 Michigan Ave.

Boston:
Motor Mart.

Syracuse:
214 Clinton St.

Buffalo:
379-383 Washington St.

Rochester:
55 Main St. E.

Pittsburg:
913-915 Liberty Ave.

Philadelphia:
13th & Cherry Sts.

Cleveland:
1829 Euclid Ave.

Dayton:
405-411 East Third St.

Minneapolis:
708 Hennepin Ave.

Atlanta:
90 No. Pryor St.

St. Louis:
538 N. Vandeventer Ave.

Kansas City:
605-607 E. 15th St.

Denver:
1562 Broadway.

Los Angeles:
118-122 E. Tenth St.

San Francisco:
423-433 Golden Gate Ave.

Portland:
86 Sixth St.

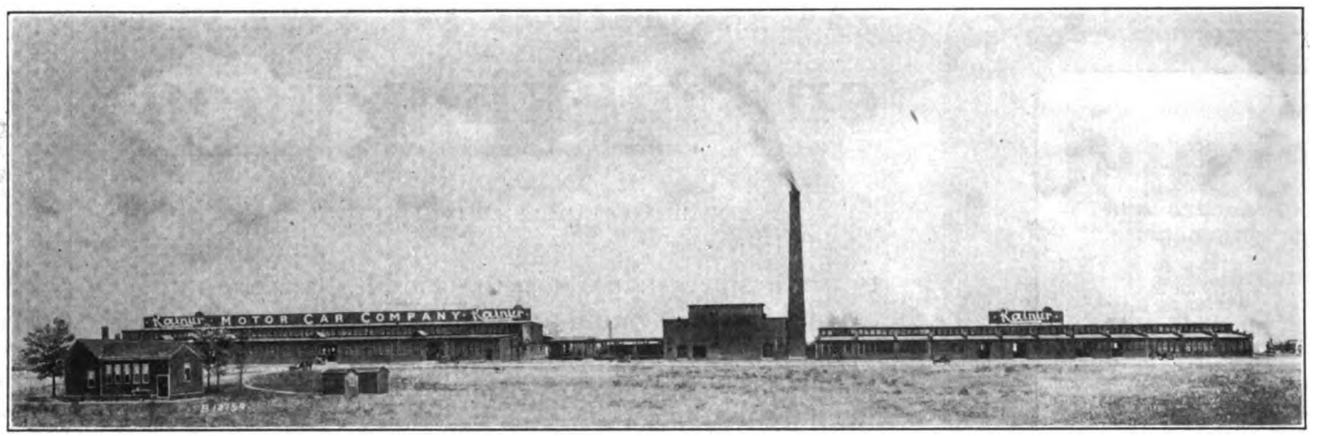
Seattle:
Ninth Ave & Pike St.

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Rainier

"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



OUR NEW PLANT, FROM WHICH IS COMING THE 1908 "MODEL D," TO ADD TO RAINIER FAME.

SOUND business economy demands that in selling a car under our original and distinctive guarantee, "Free of repairs for one year," that the chief expenditure must be at the beginning, that is, at the factory and, in material and construction, instead of in the local repair shops: Therefore our new factory at Saginaw, Mich.

The new plant comprises sixty acres of ground, with spacious brick buildings, in which every piece of machinery is new and specially designed for building the RAINIER. Nothing has been omitted that would tend to insure accuracy and superlative quality. James G. Heaslet, the original designer of RAINIER cars, is responsible for the 1908 RAINIER, which is higher-powered and more strikingly than ever a "Pullman" in quality and finish. "Quality, not quantity," is our factory watchword, and the 1908 output has been limited to 300 cars.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

CHICAGO—1725 Michigan Ave.
BOSTON—Buck & Price Co., 169 Huntington Ave.
NEWARK—Coburn & Belden, 577 Central Ave.
PITTSBURG—559 Seventh Ave.

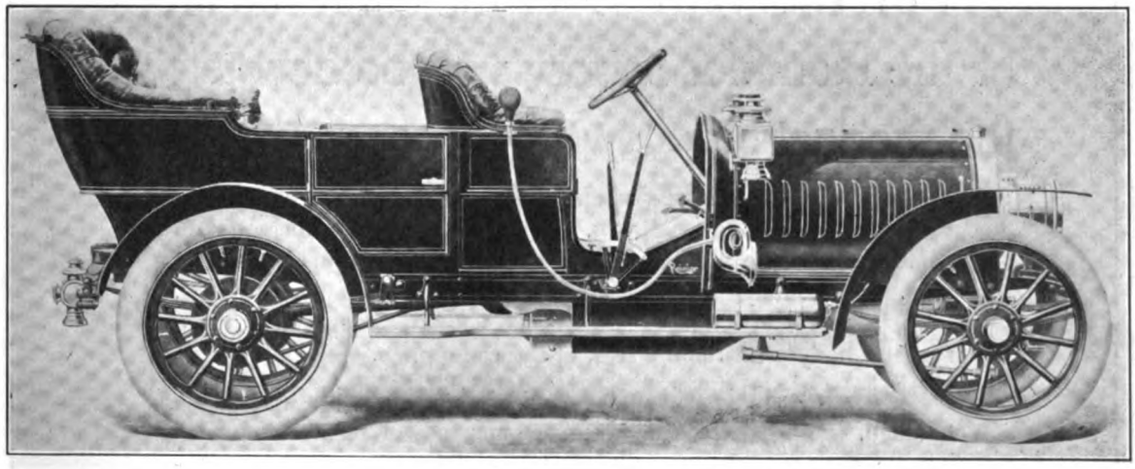
ROCHESTER—Thos. J. Northway, 92 Exchange St.
MEXICO—H. J. Braschi, Mexico City.
CINCINNATI—Auto Motor Car Co., 804 Sycamore St.
LOS ANGELES, CAL.—Smith Bros.

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Rainier

"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



1908 "Model D," 45-50 H. P.

SPECIFICATIONS

ENGINE—Rated H. P., 45-50; four cylinders, vertical, cast in pairs; 5-inch bore, by 5¼-inch stroke; cylinders hard gray iron castings, accurately ground to size; pistons light but rigid, ground to fit; valves on opposite sides, mechanically operated, all interchangeable; cams forged integral with shafts; crank shaft nickel steel forging, with bearing surface ground; main engine bearings and connecting rod bearings of finest babbitt metal, enclosed in bronze cases, a construction the same as that in the highest priced imported cars.

IGNITION—Make-and-break system, with Simms-Bosch, low tension magneto, but with a greatly improved and simplified mechanical sparking device, insuring accurate timing and minimum need for adjustment; one upright ignition shaft in place of four.

LUBRICATION—Positive feed mechanical oiler, driven by gear from the cam shaft, provides for engine bearings, magneto and pump shaft; Cylinders and pistons fed by splash system.

CARBURETER—Improved automatic type, having auxiliary air control on dash; feed by gravity flow through trap and screen; Capacity of gasoline tank, 20 gallons, two in reserve.

COOLING SYSTEM—Extra large radiator with fan running mounted on a pedestal over the timing gear case; fan belt runs vertically, driven by a pulley directly on the crank shaft.

CLUTCH—Multiple disc, alternate bronze and steel plates, running in oil; very sensitive touch.

TRANSMISSION—Selective type of gears, four speeds forward and one reverse, direct drive on third speed; shafts and gears nickel steel, and shafts mounted on imported ball bearings; counter shaft located below driving shaft, enabling use of sealed bearings, thereby avoiding oil leakage.

PROPELLER SHAFT—Nickel steel, with new and improved universal joints; driving pinion forged integral with the shaft.

REAR AXLE—Driving axle of floating type, with hubs mounted on tubular axle which carries the weight of the car; drive is bevel gear through clutch driven hubs; driving gear housings manganese bronze, while differential case is drop forging.

BRAKES—Hand and foot brakes, mounted on rear wheel drums, both interior expanding; hand brake pulls towards operator.

FRONT AXLE—Drop forging, manganese steel, I beam section; wheel hubs mounted on imported annular ball bearings.

WHEELS—36-inches with 1⅝-inch spokes, second growth, grade A hickory.

TIRES—Rear 36 x4½-inch, front 36 x 4-inch. Make optional.

FRAME—Pressed nickel steel, with 2½-inch drop forward of rear axle.

CONTROL—Spark and throttle on steering wheel, with stationary segment and foot accelerator pedal.

MUFFLER—Cut-out on all cars.

WHEEL BASE—119 inches.

SPRINGS—Front, semi-elliptic; rear, improved type of platform or three point suspension; size of springs greatly increased; quality of spring steel is most expensive and finest obtainable.

BODY—Double side entrance, seven passenger capacity, full aluminum, ironed for top; extra seats can be folded or removed instantly.

EQUIPMENT—Two acetylene head lights, generator, two oil side lights, oil rear light, large horn, brass coat rail, brass foot rest, tire carriers, trunk rack, tool box on step with full set of tools, including pump, jack and tire repair kit.

WEIGHT—2,850 pounds.

PRICE—$4,500.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

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Rambler
Automobiles

For the year 1908 the entire facilities of the Rambler factory will be devoted to the production of two Models, 34 and 31.

Model 34, a five-passenger touring car with four-cylinder vertical motor, 32 horse power, has selective type transmission with shaft drive. The wheel base is 112 in., wheels 36 in., with 4-in. tires. Price, fully equipped, $2,250. The same chassis, however, with appropriate changes in detail, will be equipped with a roadster body with rumble seat, at the same price.

Model 31 is a five-passenger touring car with detachable tonneau, equipped with the Rambler unit power plant, comprising double opposed motor, multiple disc clutch and planetary transmission entirely enclosed. Price, fully equipped, $1,400. This model can be furnished with torpedo deck in lieu of the tonneau, at $1,300.

Both models have been brought to the highest possible degree of perfection in every detail that insures

Service, Economy and Comfort

A complete line of 1908 Ramblers will be shown at a private exhibit at the salesrooms of the Homan & Schulz Company, 38-40 West 62d Street, New York City, during both New York Automobile Shows.

You cannot afford to miss making a critical inspection of these 1908 models of

The Car of Steady Service.

Advance catalog now ready; write for a copy to-day.

Thomas B. Jeffery & Company

Main Office and Factory: Kenosha, Wis.

BRANCHES AND DISTRIBUTING AGENCIES: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.
Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, October 17, 1907. No. 3

PONTIAC TAKES UP MOTOR CARS

Big Buggy Company to Build Enlarged Brush Runabout—Brush Himself Engaged as Engineer.

The formation of the Oakland Motor Car Co., Pontiac, Mich., an off-shoot of the financially strong Pontiac Buggy Co., marks the determination of another of the big carriage makers to reach for what looks to them like plums on the automobile tree.

The Oakland people seem to have made a good beginning, as they have secured Alanson P. Brush as their vice-president and consulting engineer, and will place on the market a big brother to the Brush runabout, that is, a two-cylinder vertical motor of 20 horsepower, with a new Brush balancing device, and Brush planetary transmission, wood frame, shaft drive, 96-inch wheel base, 30-inch wheels and pneumatic tires. A touring car and rumble runabout, will be offered, at about $1,250.

The contemplated output is one thousand machines, the motor, transmission and axlesets being made by the American Ball Bearing Co. of Cleveland, O., so that the Oakland Motor Car Co. themselves will merely do the assembling and bring into play their excellent facilities for body, upholstering and finishing work.

The officers of the company are: Edward M. Murphy, president and general manager; A. P. Brush, vice-president and consulting engineer; Martin L. Pulcher, secretary and treasurer. The old factory of the Pontiac Buggy Co. will be employed in producing the cars.

Moon Separates His Interests.

The Moon Motor Car Co., St. Louis, Mo. which last week was incorporated under the laws of that State with $175,000 capital, has purchased the automobile department of the Jos. W. Moon Buggy Co., and will, of course, conduct it as a separate organization. The officers of the new company are: Jos. W. Moon, president; Stewart McDonold, vice-president; Alfred Moberly, treasurer; Geo. W. Shelp, secretary; E. J. Moon, assistant secretary, and L. P. Mooers, general manager and chief engineer. It is the intention of the new officers to largely increase the output for 1908. They also intend shortly to move into a factory of their own; at present they are located in the Moon buggy plant.

Million Bid for Pope-Toledo Plant.

At a meeting of the creditors of the Pope Mfg. Co., and the Pope Motor Car Co., in Chicago on Saturday last, A. E. Schaaf, manager of the Pope-Toledo plant, submitted an offer for the purchase of that property. He was ready to pay $1,000,000 for it, $400,000 in cash, the remainder in bonds. The creditors viewed the proposal favorably, but Receiver Pope did not think the sum tendered was sufficient and a temporary deadlock resulted. Schaaf is said to be acting for Charles H. Schwab in the matter.

Dragon May Go to New England.

It is not improbable that the Dragon Automobile Co. will leave Philadelphia. The matter has been under consideration for some time and was given a serious turn last week when President John Kane Mills and other officers of the company visited several towns in New England in which factory facilities has been proffered.

Tweedy to go with Federal.

O. S. Tweedy, formerly with the Diamond Rubber Co., has contracted to become sales agent of the Federal Rubber Co., of Milwaukee, Wis., makers of a general line of rubber goods and specialties. Tweedy will not assume the duties of the office, however, until January 1st.

Hall to Operate Buffum Plant.

Bicknell Hall, of Taunton, who purchased the bankrupt plant of the Buffum Automobile Co. at Abington, Mass., will operate as the Hall Mfg. Co. He will continue the production of eight cylinder cars.

FORD'S TRIPLE SURPRISE

Detroit Maker Discloses Three New Models at Startling Prices—Landaulets and Taxicabs for $1,000—Ford and his Methods.

Detroit, Mich., Oct. 14.—If there are those who lulled themselves with the notion that Henry Ford and the Ford Motor Co. was resting on the laurels gained by reason of their popular priced four cylinder runabout and six-cylinder touring car, they will have reason for a startling awakening. For far from resting on laurels or anything else, Ford and his associates have quietly been preparing another series of sensations, one of which, at least, will prove in the nature of forked lightning, not only at home but abroad.

There are three cars in the series, and while the prices have not been definitely fixed, the approximate figures are known and they are of a nature that will cause the trade to gasp. The cars, which are illustrated elsewhere, will be exhibited at the Grand Central Palace show in New York next week. An advance view of them was accorded a Motor World man by Mr. Ford himself.

First and foremost and in itself little short of astounding, is the Ford landaulet and taxicab, with a four cylinder, 20 horsepower motor, shaft drive, wheel base of 97 inches, 30x3½-inch tires, weighing but 1,600 pounds, and which will list at the astonishing figure of about $1,000, complete.

With its appearance is partly explained Secretary James Couzens's recent extended European trip. It transpires that Couzens booked orders for 5,000 of them while abroad. They are to be employed in taxicab service on the streets of London, Berlin, St. Petersburg, and even in dear Paris itself. The Paris order alone was for 2,000 of them.

That they will bring into being taxicab

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companies in the leading American cities and seriously interfere with the more expensive foreign product, seems certain. Of course the price itself is staggering. When the cab, clean cut and eye-pleasing, beautifully finished and upholstered was revealed by Mr. Ford and the approximate price named, the Motor World man was moved to protest. But the Henry Ford characteristic at once asserted itself.

"That's all it's worth," he snapped.

It was suggested that double that price easily could be obtained for every one produced—a suggestion which merely served to bring out more of the Ford philosophy in quick-fire epigramatic reply.

"You can never sell many of anything for more than it's worth," he responded.

"That's what it's worth," he went on. "It's the price we set for it in the first place, and it's the lowest price at which it can be made and sold in the largest quantities. By at once setting the price at that figure, competition is eliminated before it starts."

"Look here," Ford continued rapidly, "look what we saved yesterday on one contract alone! On one part the cost of dies was $1,400. To build one hundred machines would be $14 each. On the 10,000 we will build it will be 14 cents each. Work that same thing through the whole car and you can get some idea of how we are able to do it. There's vanadium wherever there is stress, the cab weighs only 1,600 pounds and it will wear better and be far cheaper to maintain than anything of its kind in the world."

As if this taxicab were not enough, Ford led the way to a natty looking touring car.

"About $800, with 30x3½-inch tires," was all he said. It was enough.

Near by was an attractive looking runabout with rumble seat.

"Same chassis. About $600," and he smiled grimly.

"I'll have some more things to tell you

(Continued on Page 112)

Massnick to Make Brush Transmissions.

The Massnick Mfg. Co., Detroit, Mich., have taken out an exclusive license to manufacture for the trade the transmissions made under A. P. Brush's patents. As the company have a well equipped machine shop and are thoroughly familiar with the work, they are able to undertake contracts in quantities and to guarantee deliveries.

Touring Cars Hatching in Nebraska.

The Angus Automobile Co., Angus, Neb., are preparing to bring out a four-cylinder car; they are asking for quotations on materials in lots of 50 and 100.

Detroit Auto-Vehicle Bankrupt.

The Detroit Auto-Vehicle Co., Detroit, Mich., last week was formally adjudicated bankrupt. The referee has called a creditors' meeting for Tuesday next, when a trustee will be selected.

In the Retail World.

Orchard & Co., with a local minister as president, has opened for business in Fort Scott, Kansas. The company will handle the Ford.

The Newby Automobile Co., New Castle, Ind., have contracted for the erection of a garage at that place. It will consist of two stories, 42x132 feet.

Aubel & Wood, Akron, Ohio, are erecting a new brick and concrete garage on East Buchtel aveue, near Main street. Its dimensions are 70x100 feet.

Ellingson Brothers, Sioux Falls, S. O., who heretofore have transacted only a repair business, have expanded. They will now handle the Cadillac and have fitted up show rooms.

F. A. Brodhead has been appointed manager of the Dragon Automobile Co.'s Philadelphia branch. He formerly was secretary and manager of the American Automobile Co. at Atlantic City.

The Denver Omnibus and Cab Co., Denver, Col., opened its large garage at Court Place and Sixteenth street last week. The building is one of the largest in the State, consisting of four stories and basement. It cost, with machinery, $100,000.

The sales of the Studebaker cars in the entire territory east of the Alleghenies has been placed with the Studebaker Bros. Co. of New York. This increase of territory has led to the appointment of C. F. Redden as automobile manager of the New York house.

Fred W. Freese, Dr. Albert E. Bulson and C. T. Pidgeon are forming a company, to be capitalized at $20,000, to operate a garage at Fort Wayne, Ind. A two story 60x80 building will be erected. The new company will probably merge with the Fort Wayne Company.

The Pullman Auto Co., Sixth street, Portland, Ore., was last week visited by the sheriff, who closed the shutters. Thomas C. Devlin, receiver of the Oregon Trust and Savings Bank, filed a $10,00 attachment suit against the company which was indebted to the bank for that amount.

The Linkroum Automobile Co., Newark, N. J., has succeeded the Linkroum Smelser Automobile Co. The change was made necessary through the death of L. W. Smelser in an automobile accident at Morris Park several weeks ago. S. H. Stern, formerly manager of E. Lamberjack & Co., has been engaged as manager of the new company.

Everett B. Taylor, of the Taylor Automobile Co., 113 Telegraph avenue, Oakland, Cal., has disappeared leaving behind him liabilities amounting to $7,500, mostly in unsecured notes. His creditors claim that he has due him from the Moyer Automobile Co., for which he was acting as agent, over $5,000 and a writ of attachment has been filed against that money.

Cimiotti Bros., metropolitan agents of the Mora car, have leased the premises of 1843 Broadway, New York, as a sales room, whilst retaining their well equipped garage at Broadway and 110th street. Though this is their first year with the Mora car in New York they have made a good start and laid the foundations for increased business. The new location brings them into the heart of the new "automobile row" north of Columbus Circle.

The Week's Incorporations.

Cleveland, Ohio—Garford Motor Car Co., under Ohio laws, with $50,00 capital. Corporators—N. J. Webster and others.

Cleveland, Ohio—Cuyahoga Motor Car Co., under Ohio laws, with $25,000 capital. Corporators—C. M. Steinbrenner and others.

New York City, N. Y.—Ajax Battery Co., under New York laws, with $25,000 capital. Corporators—W. B. Davis, C. E. Gaylord and W. T. Jones.

Kansas City, Mo.—Automobile Livery Co. of Kansas City, under Missouri laws, with $2,000 capital, fully paid. Corporators—Pearl D. Karshner, George Horn and J. H. Karshner.

Boston, Mass.—Morrison & Price Co., under Massachusetts laws, with $25,000; to deal in automobiles. Corporators—President, A. S. Price, Medford; treasurer, B. A. Price, South Boston.

Newark, N. J.—Hydro-Carbon Machine Co., under New Jersey laws, with $50,000 capital; to manufacture carburetters. Corporators—James H. Marjey, William H. VanAlstine and Alexander Ostler.

New York City, N. Y.—Longacre Motor Co., under New York laws, with $1,000 capital. Corporators—John J. Archer, 1345 Broadway; H. Hovey Hill and George A. Pulsifer, 70 West 43d street, New York City.

Baltimore, Md.—Atlantic Rim Co., The, under Maryland laws, with $20,000 capital; to manufacture automobile supplies, rims and tires. Corporators—Thomas H. Gaither, Joseph B. McMullin, George R. Gaither Smith, Edward M. Hammond.

New York City, N. Y.—Ward Equipment Co., under New York laws, with $300,000 capital; to manufacture equipment for automobiles, railroads and steamboats. Corporators—J. E. Ward, T. A. Ward, New York City; F. M. Ward, Yonkers; F. H. Bates, Brooklyn, and A. L. O'Shea.

New York City, N. Y.—Riverside Auto Supply Co., under New York laws, with $30,000 capital; to deal in supplies, etc. Corporators—William H. Atkinson, 728 Classon avenue; John A. Green, 563 Seventy-second street, Brooklyn; H. C. Bebee, 163 West Eightieth street, New York City.

Brooklyn, N. Y.—Broadway Automobile and Garage Co., under New York laws, with $100,000 capital; to deal in automobiles and operate garage. Corporators—Theorore F. Archer, 140 Union avenue; Leander B. Faber, 72 Alsop street, Jamaica; Charles Reinhardt, 756 Flushing avenue, Brooklyn.

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DE LISSER ON WESTERN OUTLOOK

Reports that Dealers Anticipate a Record Business Next Season—The Class of Cars that Sell Best.

That the West has paid little attention to Wall Street and that automobiles are selling just as fast as ever, particularly those of the small type, is the opinion formed by Horace De Lisser, president of the Ajax-Grieb Rubber Company, as a result of his coast to coast trip in the interests of Ajax tires.

"While the backward season undoubtedly had something to do with the let-up in the demand for big cars," said Mr. De Lisser, "the good weather brought about a strong demand and next year all the western dealers look for a record business. Those cars selling for $2,000 or less are having a particularly good run. As might be expected, there are some few machines that are not in demand, but that is something that applies to any other line of business. The good always will be in demand while the poor always must be difficult to market. There is an almost unlimited field for business in California, Washington and Oregon."

Ajax tires, Mr. De Lisser stated, have met with their full share of favor out West. To increase the share he inaugurated two new branches, making five in all on the coast, viz.: San Francisco, Oakland, Los Angeles, Portland and Seattle.

Rainier Increases Its Directorate.

Following the establishment of their factory in Saginaw, Mich., several slight changes were made in the personnel of the Rainier Motor Car Co. At the annual meeting, held at the New York offices last week, two members were added to the board of directors, and the office of second vice-president and chief engineer was created and filled by the election of the Rainier designer, James G. Heaslett. The new directors are Jack A . Rainier, son of John T. Rainier, and Harry T. Wickes, the latter of Saginaw, Mich. The others all were re-elected as follows: John T. Rainier, president and treasurer; Paul N. Lineberger, vice-president and general manager; James G. Heaslett, second vice-president and chief engineer. Directors: Paul N. Lineberger, George C. Comstock.

Hollander Gets Fiat Agency.

As was generally expected would be the case, E. R. Hollender and his associates have obtained the American agency for the Fiat car, which therefore was relinquished on Monday last by the Hol-Tan Co., of which Mr. Hollander once was the "Hol." To further his enterprise, Hollander has formed the Fiat Automobile Co. of America, of which he will be vice-president and general manager and A. G. Hamilton, secretary. The names of the president and treasurer have not yet been disclosed. These officials are said to be the owners of an importing house which handles another car.

To obtain the agency, the new concern is said to have placed an order for a minimum of 500 cars, which was more than the Hol-Tan Co., with ripe experience as a guide, would consent to meet, hence the change. The New York edition of James Gordon Bennett's Paris Herald has also made a spread-eagle announcement for the new Fiat representatives that "henceforth" the Italian chassis will sell for the same prices as cars of American manufacture, viz.: from $3,500 to $7,500 plus $1,000 for bodies. The Herald's "sensation" will cause to smile all those who are familiar with the real prices that have been obtained for very many foreign cars during even this year of our Lord 1907.

Electric Vehicle Elects Officers.

To fill the vacancy caused by the resignation of M. J. Budlong, W. G. Henderson has been elected president of the Electric Vehicle Co., Hartford, Conn. Previously Mr. Henderson was treasurer of the Electric Storage Battery Co., of Philadelphia. Concurrent with his election to his new office, three other of the Electric Vehicle officials were moved up a notch, J. B. Entz becoming first vice-president, H. W. Kyte, second vice-president, and Henry W. Nuckols, secretary and treasurer. Former president Budlong, who has just returned from abroad, is said to be considering an offer to assume the management of a New York establishment.

Bay State Finds Strain too Great.

After setting out with high hopes about a year since, the Bay State Automobile Co., 112 Norway street, Boston, made an assignment to Attorney J. J. Irwin, on Tuesday last for the benefit of its creditors. Although not many cars were produced, the concern's liabilities are about $75,000; it is possible that the assets may equal that sum. Lack of capital and stringency of the money market are given as the causes of the failure.

Brandt Suffers Sudden Attack.

E. H. Brandt, sales manager of the Corbin Motor Vehicle Co., New Britain, Conn., was taken violently ill on Thursday last and was at once removed to a hospital where an operation for appendicitis was found necessary. Following a serious turn, his condition was at last reports said to be hopeful.

Franklin Reports Big Increase.

According to a report from the H. H. Franklin Mfg. Co. their orders for special deliveries already in hand are 42 per cent. greater than last year. They also state that reports from their Southern traveler indicate an increase of at least 50 per cent. in that section of the country during 1908.

DIAMOND WILL AGAIN "STAND PAT"

Settles Doubt by Announcing Its Policy—No Price Reductions and no Untamed Competition for Business.

Competition in the field of quality only, is the text and essence of the formal 1908 announcement of the Diamond Rubber Co. It is made public this week, and bears the signatures of A. H. Marks, chief of the manufacturing end in the Diamond factories, and W. B. Miller, general sales manager.

The greater expense of the Diamond Wrapped Tread method of manufacture is pointed out and the statement made that if prices were reduced on Diamond tires it would force the abandonment of the wrapped tread Diamond tire, developed only by years of effort and large outlays of money. The company will entertain no such suggestion, but on the other hand, will not solicit business on a competitive price basis. The trade and public are asked to consider quality before price, and ultimate economy in the purchase of tires, rather than first cost.

The Marsh rim's successful record is also conspicuously mentioned. As to price of both tires and rims, net lists have been published and they are for everybody, whether novice or expert, owner or chauffeur, without any manner of discrimination.

The somewhat famous "stand pat" announcement of The Diamond Company a year ago is in every particular reaffirmed. At that time, the announcement made it appear possible that the big concern might "cut loose" in 1908.

Referee Appointed for Importers.

Edwin B. Root has been appointed referee in bankruptcy for C. A. Tileston & Co., the New York automobile importers, who failed last week. The firm assets, it is understood, are covered by a chattel mortgage for $6,750, held by the Riverside Bank.

Smalley Files Its Schedules.

Schedules field by the Smalley Motor Co., Grand Rapids, Mich., disclose assets of $134,418.84 and liabilities of $112,854.33. Of the latter amount $20,000 is represented by first mortgage bonds and $65,000 by sums due the local banks.

Oliver is Now the Index.

The Oliver Instrument Co., Minneapolis, Minn., has changed its name to Index Speed Indicator Co., to conform with the nature and title of its product. H. E. Pence still remains the hand at the helm.

Another Runabout from Pontiac.

The Pontiac (Mich.) Spring & Wagon Works are working on a $600 runabout; they expect to have it ready to exhibit at the New York show.

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"Famous Apperson Cars"

This is the first time in years that the dealer has had an opportunity to secure and represent the Apperson Line.—There is a good reason. Ask us what it is. Correspondence with reliable dealers is solicited.

The Line and Prices

Model J. R. 50-55 H. P. "Jack Rabbit" Runabout, $5,000. Speed 75 miles per hour. Immediate delivery.
Model K, 50-55 H. P. Touring Car, $4,200. Equipment—5 lamps, horn, generator, set of tools, folding top, robe rail, foot rest, tire carrying irons and trunk rack. Immediate delivery.
Model M, 30-35 H. P. 4 passenger Roadster, $2,750. Equipment—Folding top, 5 lamps, generator, horn and set of tools. Delivery about Nov. 1st.
Six Cylinder, 50-55 H. P. Touring Car, $5,000. Equipment—5 lamps, generator, horn, set of tools, folding top, robe rail, foot rest, tire carriers and trunk rack. To order. Delivery after November 1st.
"Big Dick", 96 H. P. Runabout, 2 passenger, racing type, $7,500.
"FAMOUS APPERSON CARS" are the strongest, and for their rated horsepower, are the fastest cars built in the world.

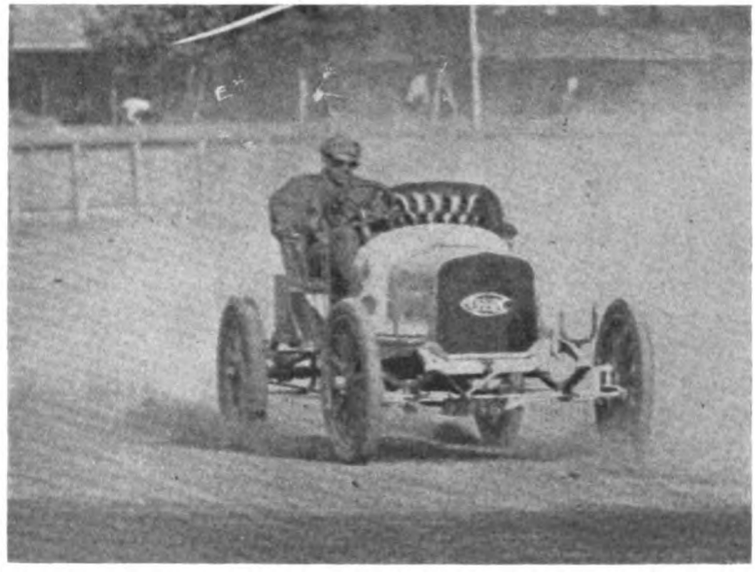
Dealers' Opportunity— Owing to the increased quantity of production, we shall appoint a few Apperson Dealers. Therefore, we shall be glad to negotiate with reliable dealers who are in position to give the Apperson line the representation it merits.

Apperson Bros. Automobile Company, Kokomo, Ind.
Members A. L. A. M.

SIDNEY B. BOWMAN AUTOMOBILE CO.,
225 W. 49th St., New York, N. Y.
JOSEPH F. GUNTHER CO.,
1240 Michigan Ave., Chicago, Ill.
FRED S. SMITH,
38 Columbus Ave., Boston, Mass.
PHILADELPHIA AUTO COMPANY,
338 North Broad St., Philadelphia, Pa.

"Working in flawless fashion throughout the distance, the (Corbin) car finished the race in 1 hour, 2 minutes, 14⅘ seconds, which is a new 50-mile record for the Readville track."—*Boston Post*, September 15, 1907.

THE FULL-JEWELED CORBIN MOTOR CARS



THE FULL-JEWELED CORBIN MOTOR CARS

THE CORBIN MOTOR VEHICLE COPORATION, New Britain, Connecticut
Member Association Licensed Automobile Manufacturers.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, OCTOBER 17, 1907

The Motor World's Show Numbers will bear dates October 24th and 31st and November 7th.

Effect of the Big Figures.

Promoters have been given not only a new lease of life, but have been supplied with more toothsome bait than ever has been dangled before a gullible board of trade.

For during the past week the estimated production of the automobile industry for the year 1907 has made its appearance. It places the total number of cars produced at 55,000. Individual editorial fancies have multiplied this number by sums ranging from $2,000 to $3,000, according to their average valuation of cars, and in this way the value of the year's product—or "the amount received by the automobile manufacturers," as one paper expressed it—is estimated to be between $110,000,000 and $165,000,000.

Such impressive arrays of figures constitute a prodigious mouthful and if the crafty promoter does not turn them to his advantage and a new crop of suc—, that is, prospective factories, does not result, it will be cause for remark. There are not many country or half-country towns possessed of boards of trade that will not greedily bite at the hook which seems to hold a "piece" of such magnificent wealth.

While there is no way to prevent it, the publication of such figures is in the nature of a misfortune. Represented as the sums received by the automobile manufacturers, they simply strengthen the too popular notion that automobile manufacturing is a short cut to fortune and that those engaged in it are rolling in money, which is but another term for prosperity. The populace takes no account of the immensity of the costs of production and sales, and would smile cynically if told that it is doubtful if more than 10 per cent. of the automobile manufacturers have earned a profit. It is notable that the public statement of a prominent maker to that effect did not obtain very wide or very conspicuous circulation, and yet it undoubtedly is near to the truth.

Pessimism will serve no purpose, but the industry will be well served if a few of its strong men will but come out into the open and frankly let it be known that the business has been overdone—that it has been overcrowded, and that it no longer is a boom business nor an El Dorado. It may assist in preventing a few country "boards of trade" and "business men's associations" from succumbing to the wiles of the glib tongued promoter and to this extent at least the situation will be bettered and the future be safeguarded.

Little Things That Are Neglected.

Perhaps it is not too much to say that no single feature of the average car can be called in question as to its suitability or general reliability in action. All cars have their own specific weaknesses, but the frailties of one are usually found to be remedied or otherwise eliminated in another. Certain points, however, generally display a greater tendency to developing failures than others, and most of these are such as have to satisfy the simplest requirements and present the least difficulties to the designer. Sundry little improvements which are greatly in need, and are almost self-suggestive, also are being pretty generally ignored.

Thus, while the fuel tank of the average car no longer evinces a tendency to break away from its fastenings and whip around under the seat, or drop off altogether onto the road, it is far from perfect, as is its location and method of attachment in many instances. Sometimes the feed pipes are not laid out with due care, but are strung up any old way with more regard to economy of tubing than satisfactory results in use. But perhaps the most trying fault in this connection arises from the lack of provision for the periodical cleaning out of the tank. A few makers provide hand holes with suitable covers, which are useful not alone for this purpose, but also in making repairs, closing leaks, taking out dents, and refitting broken or leaky connections. In most cases, however, when even a small amount of dirt once finds its way into the tank, it must either be rinsed out through the filling cap, to do which the tank must be dismounted from its cradle, or else it must be allowed to remain until it finds its way through to the strainer, and probably to the carburetter as well.

Happily there is no longer the occasion for finding fault with the careless methods of installing the wiring of the average car, that existed a year or two ago. Yet in all too many instances, the wiring proves to be the least permanent part of the mechanical equipment, whereas there is no reason why it should not be as permanent as the coil, once properly located and protected, supposing only that proper provision has also been made for disconnecting the terminals occasionally, when it becomes necessary to replace the batteries or clean the timer.

The same fault finding attitude may be assumed in the inspection of nearly every organ of the entire machine, and certain minor discrepancies found at every joint. Thus while the generality of makers are paying close attention to the matter of brake construction, both as regards stability and durability and actual braking strength, facilities for adjusting the brakes, and methods of compensation, remain much as hitherto. Steering connections and universal joints on propeller shafts and other connections are carefully worked out, but the driver is left to his own discretion in the matter of lubricating them, save in a few of the larger cars, where grease cups are provided. Other instances showing a general tendency to neglect or ignore the little things which mean so much to the

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driver, might be given and in deplorable number.

For the most part, such minor deficiencies are chargeable not so much to the basic design of the car, nor even to the designer, as to the faulty processes of final production which leave no room in the hurry of assemblage for the close attention to small details which is required for absolute success. Even going a step further, it may be said that in too many cases the work of the designer is stopped, not where it is most required, but where it is greatly in demand to round out and perfect that which already has been done. The design of a car is not complete until the exact nature and location of every last ounce of material to go into it has been indicated after careful consideration of all the requirements. In this particular respect many American makers show a deplorable weakness, and one which in the end proves as expensive as some of the more prominent mistakes of the past, which have shown to far worse advantage.

Limiting Power of Racing Cars.

In the mass of suggestion that has been proffered that track racing may be rendered safer, Henry Ford's idea of restricting competition to cars employing motors having a piston displacement not exceeding 250 cubic inches stands out clear cut and distinct. It strikes at the root of the trouble and is in line with the Motor World's suggestion that it is time to limit the power of cars employed in track contests. As Mr. Ford maintains, 250 cubic inches allows ample scope for ingenuity and permits of all the speed that is necessary for practical purposes.

Of course, the piston displacement plan is not a new one. It was considerably discussed two years ago but nothing came of it. The A. A. A. permitted the suggestion to pass unnoticed, as so many other deserving suggestions have been permitted to pass—that is, until mischief has been done. Although it probably is unknown to the A. A. A. and to most of those concerned with automobiles, the piston displacement limit already obtains in this country so far as motorcycles are concerned and has proved a most effective regulation, not only for the sport but, in a measure, for the trade as well, in that it has made the manufacture of freaks of abnormal power unprofitable. The body that governs motorcycle sport in America did not wait for tragedies to occur before providing safeguards. Several distressing fatalities had occurred abroad to both competitors and spectators, exactly as they have recently occurred in automobile racing in this country, and profiting by this experience and for no other reason, the Federation of American Motorcyclists established a limit of 5 horsepower for machines eligible to competition.

In due course, the term horsepower being elastic, trade rivalry led to the construction of machines bearing that rating, but manifestly of much greater power, and that were close to the danger point. Again, the motorcycle organization did not dodge the issue or cry out to the trade for help. It met the "trade rivalry" more than half way by promptly wiping out the horsepower definition and substituting therefor an inelastic limit of 61 cubic inches piston displacement, and there it stands to-day. No machine of greater capacity is permitted in a track contest. The few freaks of abnormal power that exist are restricted to straightaway trials and even then their performances go for naught. They are not booked as records. It is to be added that in the five years' history of motorcycle racing in America, there has been but one fatality and no broken bones; and even motorcycles have a reputation for "going some."

Doubtless the idea that anything is to be learned from the modest little two-wheeler will be poopoohed in many directions, but the fact remains that the wise man will profit by the experience of others, it matters not who they may be. Having made automobile sport a mere annex of the trade and, therefore, being fearful of doing anything which may offend the trade, whether the A. A. A. really is in a position to take a stand for piston displacement or anything else that, while making for real safety, would render some cars unavailable for speed purposes and cause a trade outcry, is an open question.

COMING EVENTS

October 18, Middletown, Pa.—Motor Club of Harrisburg's race meet at Middletown track.

October 26, Allentown, Pa.—Race meet at fair grounds track.

October 24-31, New York City—Automobile Club of America's eighth annual show in Grand Central Palace.

November 2-9, New York City—Association Licensed Automobile Manufacturers' eighth annual show in Madison Square Garden.

November 9-16, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show at First Regiment Armory.

November 15-16, Newark, N. J.—New Jersey Automobile and Motor Club's 24-hour endurance contest.

November 26, 27, 28, Chicago, Ill.—Chicago Motor Club's three days' 600-mile reliability run.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

December 9-14, Detroit, Mich.—Detroit Automobile Dealers' Association's show at Wolff's pavilion.

January 14-18, Hartford, Conn.—Hartford Automobile Dealer's Association's annual show in Foot Guard Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sportsmen's Association's show in Light Guard Armory.

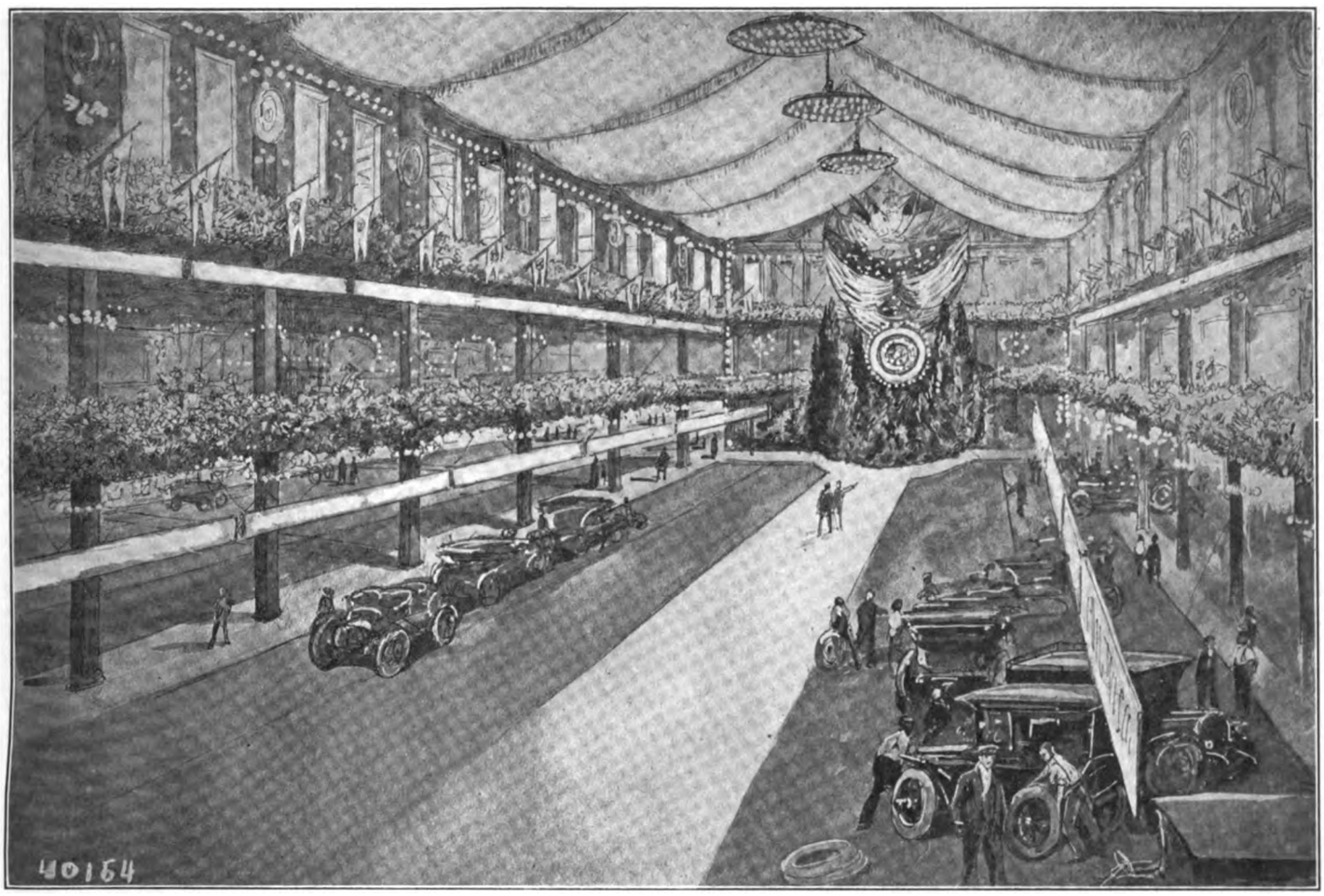
April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association show in Duquesne Garden.

It may not occur to some of the gentlemen who are permitting themselves to be used for a more or less hopeless and misguided "road race for stock cars" for C-h-a-r-i-t-y'$ sake," that charity sometimes wears a commercial veil. For instance, what a perfectly lovely affair such a charitable function may prove for, say, an importer who had undertaken the tall task of selling several hundred foreign cars in America! We once heard of a hill climbing contest "pulled off" by a press agent—not in his own name, of course—in order that a couple of specially built cars, which had been designed for another purpose, might be exploited, the program being so arranged that they scarce could have failed to do so.

A press agent is worthy of his hire and if he can "deliver the goods" he is entitled to all he receives, but it matters not how much of a good fellow he may be, the fact remains that there should be no room for road races promoted by press agents, it matters not how much he may disguise or conceal himself behind another name, or how many good natured and obliging, but unsuspicious, gentlemen he may find willing to permit themselves to be "used" to further his purposes.

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AUTUMNAL WOODLAND SETTING FOR PALACE SHOW



INTERIOR OF GRAND CENTRAL PALACE SHOWING PLAN OF DECORATION

While the Grand Central Palace, New York, does not readily yield itself to decorative treatment, the manner in which it will be "dressed" in its autumnal garb for the Automobile Club of America's eighth annual show is portrayed by the accompanying illustration.

The liberal use of natural boughs and leaves banked up against the columns, panels and balconies of the building will form an harmonious setting for the cars that will be staged. They will also convey that suggestion of out-of-doors which properly belongs with the automobile. Not only does the decorative scheme thus take cognizance of the motor car as an outdoor vehicle but it also pays tribute to the season, the reds and yellows of the autumn leaves providing sufficient color to give real decorative value.

The autumnal woodland effect will of course be supplemented by garnishments of a more artificial sort, such as banners and flags, and at the end of the building an immense replica of the Automobile Club's insignia wil be shown. But the preponderance of restful green will give the various shades and gaieties of color on the glistening automobile bodies a chance to shine individually to advantage, without being "killed" by any powerful color theme in the general decoartions. The soft, irregular lines of the foliage will also soften the hard, conventional form of the building's interior into an attractive embowerment.

For the Charity Road Race!

If Thomas Francis Moore, publicity promoter and general all-around good fellow, does not "deliver the goods" it will not be his fault. After resting from his labors as toastmaster at a luncheon designed to attract guests to a Broadway hotel, he plunged with renewed zest into his "charitable" project, a road race for stock cars to be held in the spring. He wrote dozens of letters to manufacturers extolling the glories of such charity and as he has time to burn he paid visits to other tradespeople to whom he sang the same sweet song.

On Tuesday last, Mr. Moore, who is sometimes known as the Metropolitan Automobile Association, held a meeting in a New York hotel at which replies to some of his letters were read—those that favored the "charity"; for there were others that were very pointed in their failure to appreciate Moore's benevolence. Mr. Moore's most obliging "executive committee," Robert Lee Morrell, presided at the meeting and very kindly announced that it was not Moore's, or rather his vest pocket association's intention to assume the control of automobile sport, whereon two other elderly and good natured gentlemen made the motions that a charity road race was very much to be desired—the very motions that Moore himself would have made. There was also some talk of a $1,000 entry fee before the meeting adjourned. The importing trade was quite numerously represented. Moore now feels much better. He had been quite pale, as on the very morning of his meeting, a cog in his scheme slipped somehow, the big New York daily with which his once side partner in the "charity" is connected, declaring that the road race, the course in Westchester county, and even the big trophy he had talked about, were merely "dreams."

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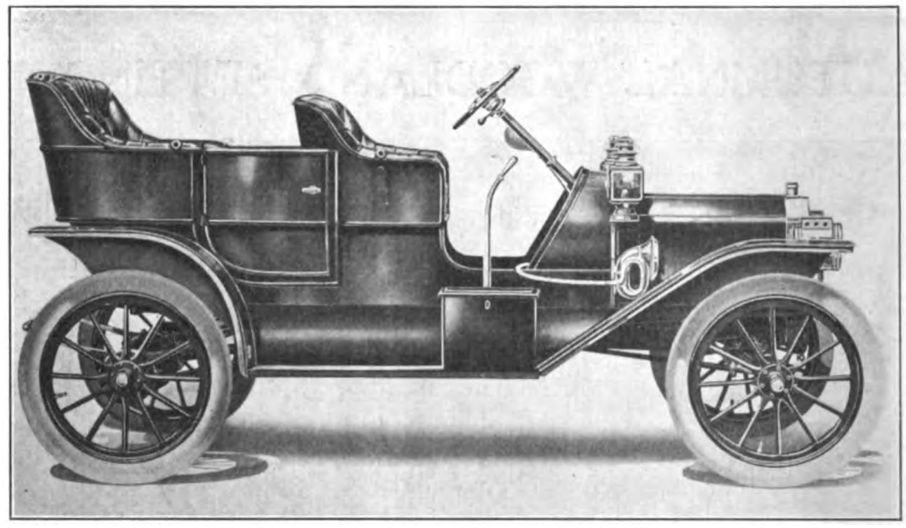
FORD'S TRIPLE SURPRISE

(Continued from Page 106)

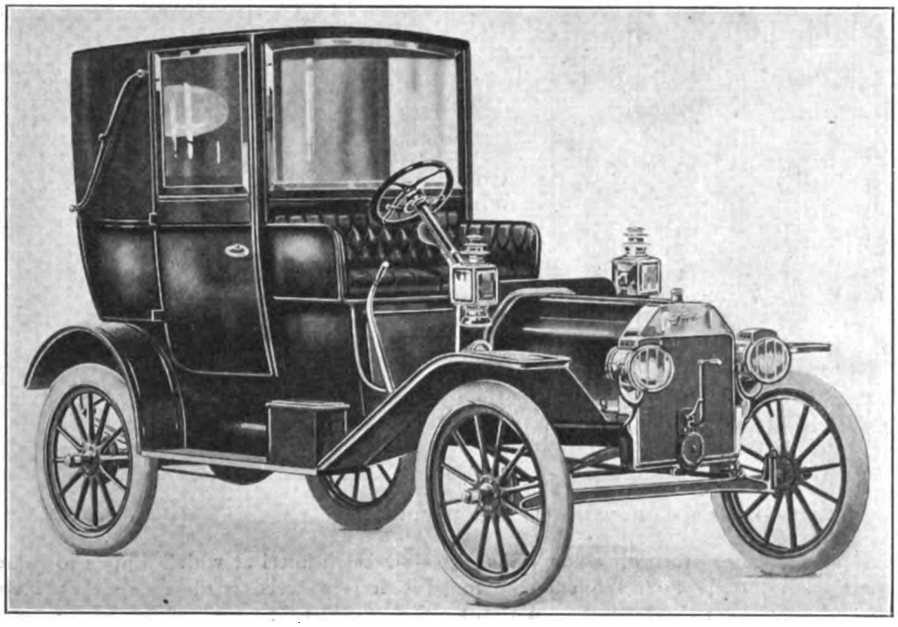
at the New York show," was Ford's parting shot.

The Ford Motor Company, according to general report, now has about $1,250,000 lying idle in the banks, and Henry Ford solemnly declares the company will build 25,000 automobiles the coming season. This year's output was approximately 10,000 machines.

The daring which is contained in these plans and prices will serve anew to call attention to the man responsible for them Henry Ford has ever been an independent thinker. Never, even in his earlier and leaner, much leaner, years has he followed a beaten path or taken any man's judgment before his own, preferring instead to shape his own course and steadfastly follow it, turning a deaf ear to any and all attempts



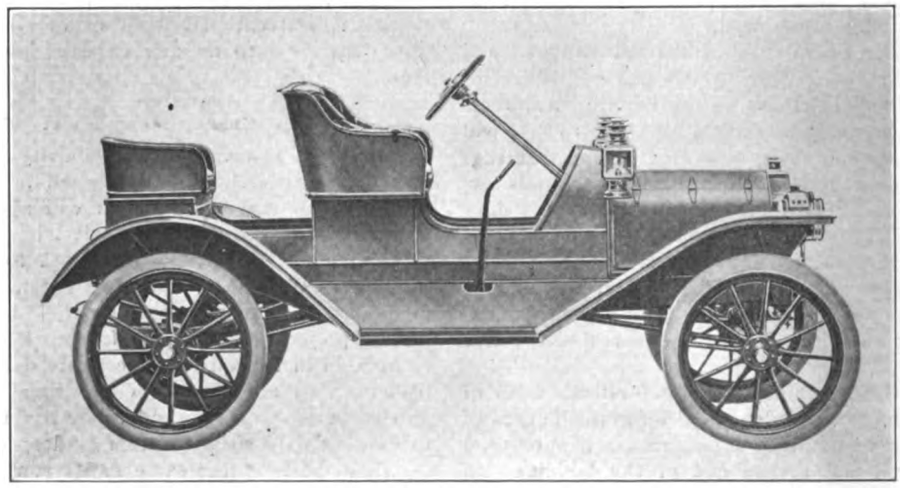
20 HORSEPOWER FORD TOURING CAR



FORD LANDAULET AND TAXICAB

to swerve him from it. In other words Henry Ford cannot be "controlled." He is not what the political conservatives would call a "safe" man. Far from it. He has deliberately flouted trade customs and usage, and confounded the prophesies of commercial disaster that arose on all sides.

He is a man who appears to be sufficient unto himself. He is his own designer; his own manufacturer; he is his own financier. He has no use for a lawyer except to have him do in legal form that which he wants done. The wisdom of it he considers his own affair. And yet Ford's activities are limited to a directing capacity. As he himself says, he does not, and never did, work hard. All he now wants is to have the "boys" associated with him make money. He is the firmest kind of a believer in entrusting responsibility to those who have "made good" with him, and he stands back of his men to the last ditch. His own tastes are simple in the extreme. His time is largely spent in riding alone along the country lanes in one of his famous little runabouts or in his den at the factory where he exercises his hobby of taking to pieces and repairing old watches, for he is a watch maker of no mean ability. These diversions and working on his farm occupy most of his time and it is probably during these hours his active mind conceives the things he is to do and there are born the mechanical creations that have made him famous. For success has been written large on the banner of Henry Ford. He is a factor to be reckoned with and it serves no purpose to disguise or deny that truth. That he is keenly alive to his opportunities also is apparent, not only in the nature and prices of his product, but in the timeliness and results of Couzen's trip abroad and in the results also of the carriage show in New York last week. For, be it known, the Ford cars were there and a great "killing" was made in respect to the volume of orders placed by carriage dealers.



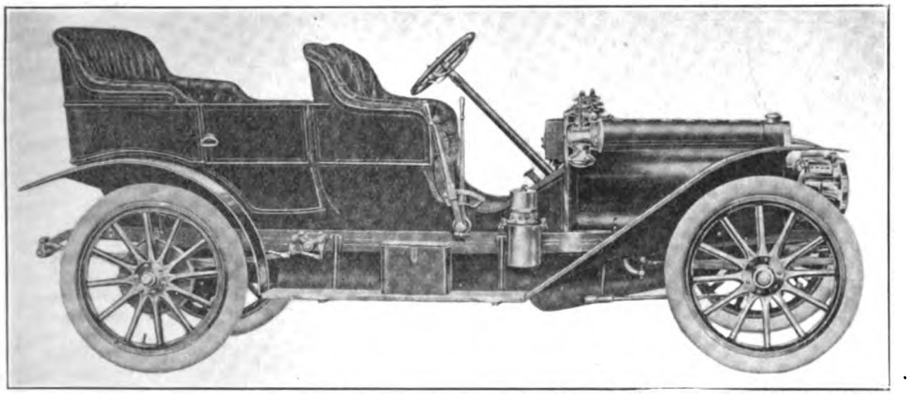
FORD RUMBLE RUNABOUT

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THE CARS FROM KENOSHA

Two of Them, Both Ramblers, of Course—Four Cylinder Model Planned on Practically New Lines.

Although it was announced some weeks since that the Rambler line for 1908 will consist of but two distinct models, each of which will be furnished either in touring car or runabout form, it was not until this week that Thomas B. Jeffery & Co. definitely made known the mechanical details of the product of their Kenosha (Wis.) plant. These details indicate that the 1908 Ramblers will be among the most improved cars on the market.



FOUR-CYLINDER RAMBLER

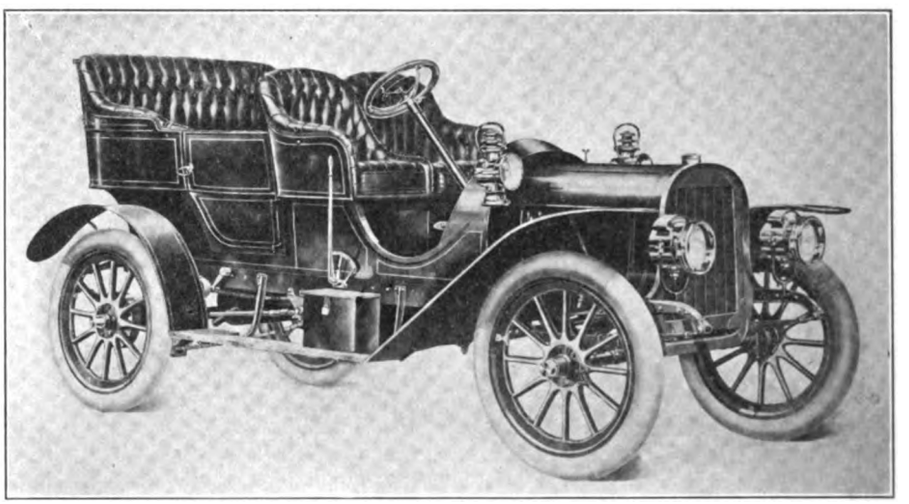
Of the more important improvements developed in the case of the larger four-cylinder car, which is to be known as Model 34, may be instanced the motor, which is entirely new, the selective type change speed gear, heavy brakes, large wheels, and semi-eliptical springs, which are used both in front and in the rear. The motor, which is of the conventional quadruple, vertical, type, differs from those employed in previous models, principally in the use of valves placed on the right hand side of the cylinders in offset pockets, and worked directly from below, instead of being mounted in the head and actuated by means of long plunger rods and overhead walking beams. In addition to this feature, however, the somewhat exceptional nature of the crank case, which is of new design and so contrived that an unusually large amount of working room may be obtained by the removal of the side plates without disturbing any of the adjustments, also is noteworthy, as is the method of suspension. This comprises a stout tubular member running tranversely of the frame, and supporting a forward extension of the case, and a dropped cross member at the rear, upon which the motor is cradled. The case is of the non-divided type, and the crank shaft with its rear and center bearings adjusted in place, is slipped in from the rear.

The transmission—change gear, propeller shaft and live rear axle—externally is much the same as was used last year. Several points of difference are to be found, however, particularly in the case of the change gear, which is of the selective type. Like the axle, the entire group runs on Timken adjustable roller bearings. The neat design of the system, as well as the unusual feature of actuating the gear striking rods from the rear instead of the front end of the gear case, are made apparent by the accompanying illustration.

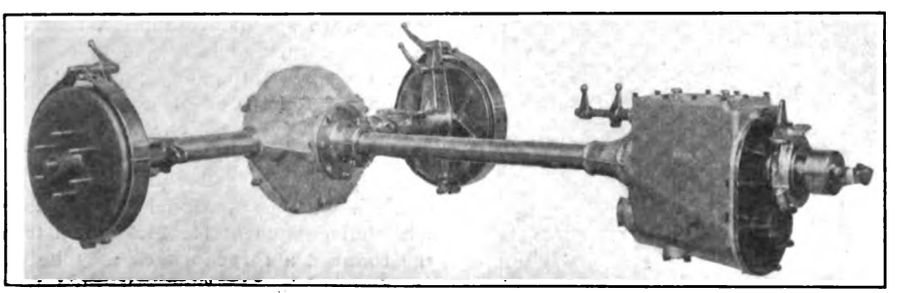
The wheels are of new design, taking 36 by 4-inch tires, and have unusually large brake drums, 13 inches in diameter by 2½ inch face, the aggregate of surface for the duplex system amounting to something like 410 inches. The drums are heavy steel stampings, bolted to drop forged hubs. The semi-elliptical springs are set very low, those in front being almost flat, and are made up of comparatively thin leaves, thus giving an exceptionally easy riding vehicle.

Another feature, which is common to both types is the steering gear, the pillar of which has been altered somewhat, a new 17-inch wheel being installed, which carries the control levers for the motor, both of which are above the plane of the wheel and work over circular segments in the popular style.

The roadster or runabout equivalent of this type has a three-passenger body, raked steering column, front axle carried forward of the radiator, and alluminum flooring. Altogether it is a very neat and racy looking machine, well suited to the purpose for which it has been worked out. The price of both this and the large touring car will



TWO-CYLINDER RAMBLER



COMPACT RAMBLER TRANSMISSION

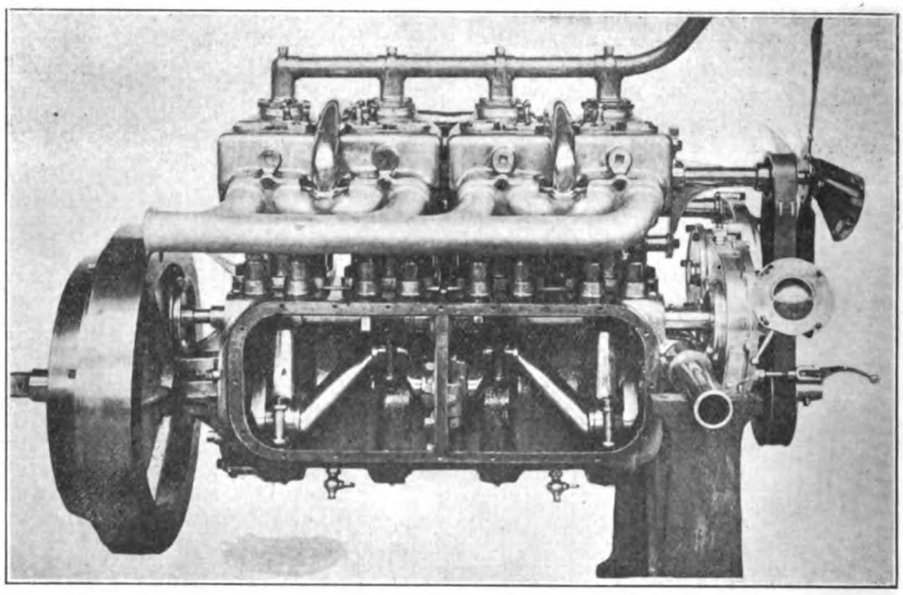


NEW STEERING WHEEL

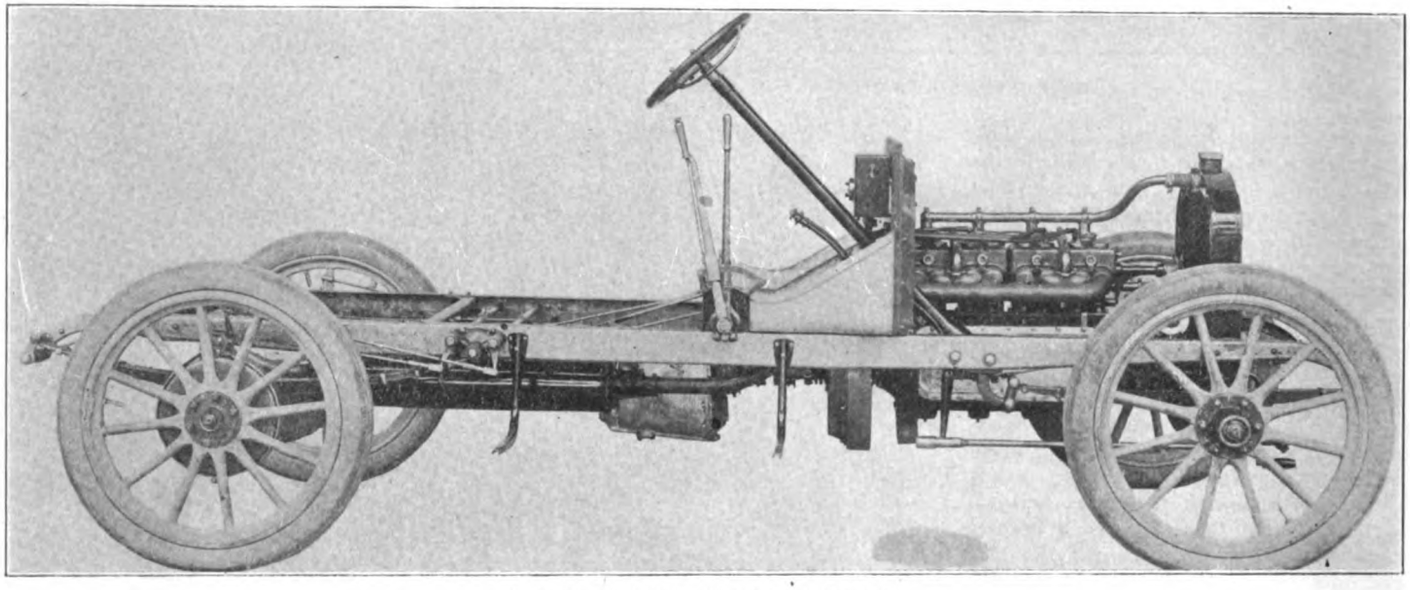
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be $2,250, which includes the full touring equipment without top.

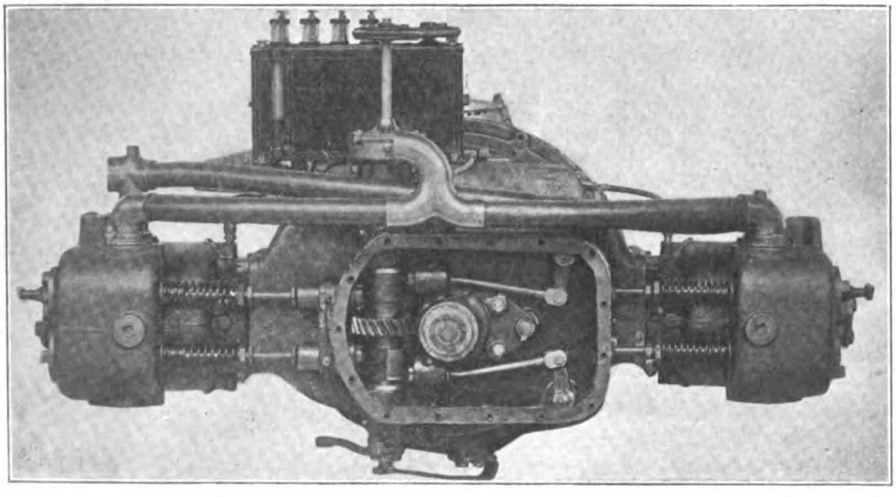
Among the several improvements which mark the new two-cylinder model may be instanced the power plant, which, while still of the unit type, as was the case last year, has been altered considerably. The double-opposed horizontal motor is retained, but the valves are now placed at the side of the cylinders instead of over them, thus necessitating the adoption of a somewhat modified valve gear. This consists of a single vertical camshaft, working in a compartment at the side of the crank case, and actuating the valves by a direct thrust motion. The two-to-one gearing is of the worm and pinion type, and permits the use of a release mechanism for starting purposes, thus eliminating the necessity of employing the noisy petcocks for this purpose. The cylinders are 5 by 6 inches in measurement and are water jacketed all around, a special allowance being made for cooling the heads. The bearing area of the



FOUR-CYLINDER MOTOR, SHOWING METHOD OF MOUNTING



CHASSIS OF FOUR-CYLINDER RAMBLER



TWO-CYLINDER MOTOR, SHOWING VALVE GEAR

motor has been increased 50 per cent. The outboard bearing beyond the change speed gear is of the anti-friction type, mounting ¼-inch balls.

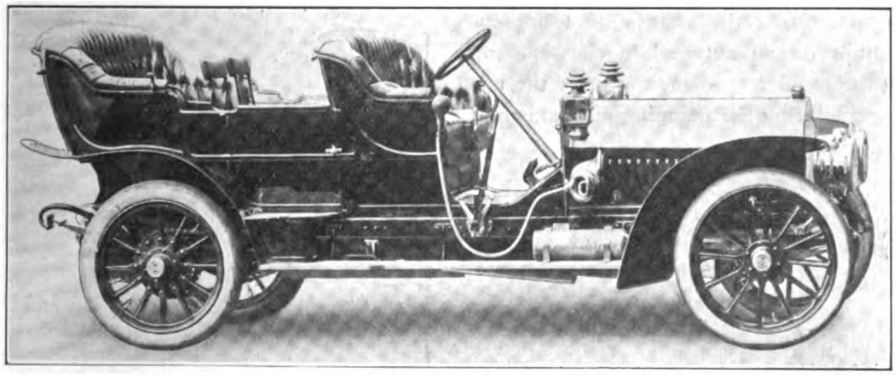
As to the change speed gearing, as heretofore, it is completely encased, and runs in an oil bath. A considerable increase in the size of the brake bands, has been made, however, and the lever by means of which the forward speeds are applied, now works in a quadrant, and is locked in each position, thus preventing any possibility of its jumping into or out of gear through the vibration of the car. The wheels are shod with 34 by 4-inch tires. The regular model is equipped with a five-passenger tonneau body, is known as Model 31, and is sold with full equipment for $1,400. Instead of the tonneau a torpedo deck may be fitted, on requisition, the runabout thus formed selling for $1,300.

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AMERICAN LOCOMOTIVE MODELS

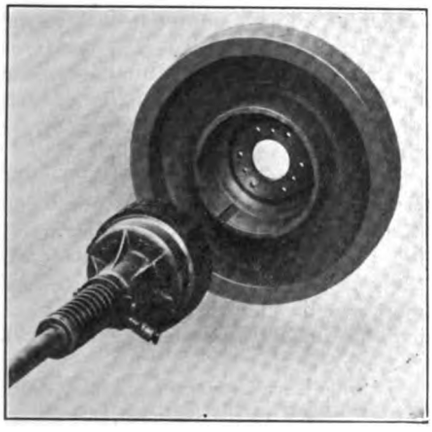
New Six Cylinder to be the Leader for the Season—Changes Made in the Four Cylinder.

During the period of the two New York shows, the American Locomotive Automobile Co. will flock by itself at the Waldorf-Astoria with two of its three 1908 models of what is this year to be known as the American Locomotive Motor Car, instead of the "American-Berliet" or plain "Berliet" of the past.



FOUR CYLINDER AMERICAN LOCOMOTIVE

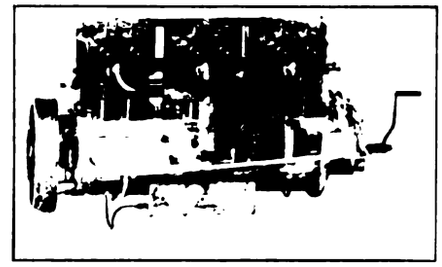
The leader of the trio is entirely new, being a six cylinder rated at 60 horsepower, and offered as a car remarkable for compactness, lightness, power and flexibility. It has the same length wheel base as the 40 horsepower four cylinder car, 126 inches, and weighs only 300 pounds more. The cylinders are 4¾ inch bore by 5½ inch stroke and are so compactly grouped as to give a bonnet no longer than that on many four cylinder cars. The car has direct drive on both third and fourth speeds, and this year the manufacturers have taken to high tension magneto ignition instead of the make-and-break. Double chain drive, selective transmission of the sliding gear type, with four speeds forward and reverse, multiple disc clutch and four generous brakes, constitute some of the other features. With a full load of passengers the car is capable of 70 miles an hour on an average road. Equipped with a touring or runabout body the price is $7,500, and with a complete limousine it is $8,500.



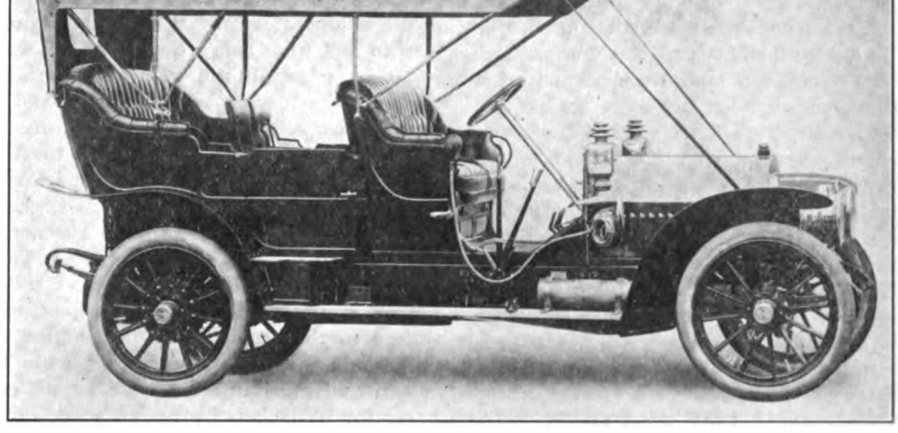
AMERICAN LOCOMOTIVE CLUTCH

The four cylinder 40 horsepower model, which has been the leader for the past season, has undergone several changes. The radiator has been moved slightly back of the front axle, the fan flywheel has been discarded and a cast iron flywheel substituted, and a belt driven fan placed directly back of the radiator. The lubrication has been changed to a concealed tank and sight feed and force pump. The steering gear has been made more rakish. No changes have been made in the ignition or carburation and the same multiple disc clutch and direct drive on third and fourth speed are used as heretofore. The control levers have been changed to bring the brake lever outside the gear shifting lever. The four cylinder, 40 horsepower model lists at $6,500, with an extra thousand for a limousine or landaulet body.

In the light car a complete change in the drive has been made, side chains being abandoned for a shaft to bevel gears. This model, which is rated at 22 horsepower, is intended largely for town use. Its chief features are a four-cylinder motor, selective transmission with four speeds forward and a reverse, direct drive on the high speed, and a very neat rear axle arrangement. The differential housing is of one piece, with a removable cover, and is so designed that the entire differential and bevel driving gears may be removed by simply taking off the cover. The rear axle is of the floating type, the rear wheels being mounted on ball bearings on the axle tube and the driving axle transmitting the power from the differential to the outer ends of the wheel hubs by means of jaw clutches. All the driving mechanism may be taken out of the axle without even jacking up the car or removing the wheels. The axle is trussed and of comparatively heavy construction. The usual radius or strut rods are provided, and the torsion rod, spring supported at its front end, takes up the driving torque and braking effect. No brake is mounted on the propeller shaft or other part of the transmission system, but both internal and external brakes are applied to the rear wheels, the contracting brakes being operated by a pedal and the expanding brakes by a hand lever. Air space between the two sets of brake drums is provided to facilitate the radiation of friction heat. The gasolene tank, as heretofore, is mounted back of the rear axle, the fuel being forced to the carburetter under pressure. As this model is intended for city use, the wheels are of smaller diameter than on the other models, the tire sizes being 870 by 90 mm. for the front



SIX CYLINDER MOTOR



SIX CYLINDER AMERICAN LOCOMOTIVE

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wheels and 880 by 120 mm. for the rear. In either the limousine of landaulet style, the price of the light car is $6,000. All of the models will be made of imported materials as in the past, vanadium steel and iron playing a large part in their construction, and when delivered to customers will have a very complete equipment, including tops.

Convenient Means of Adjusting Brakes.

Although considerable attention is now being given to the matter of brake design, the resulting improvement in the area of contact surfaces and strength of parts, is not all that is required. Next in importance to capacity and strength, the method and nature of the adjusting means should be looked after, as well as the provision for compensation between the rear wheel brakes. It is important not simply that means of adjustment be provided, but that it be of such a nature as to be readily accessible in case of need. Probably the most striking example of the way in which this feature may be disposed of with an eye to the convenience of the operator as well as to the element of time-saving on the road, is seen in the case of the Westinghouse cars, on which the rear expanding brakes are adjusted by means of a pair of small hand wheels extending to the rear of the axle just inside the spring. The arrangement is so contrived that by turning them one way or the other the tension of either brake may be altered as required, or the resistance of the set brought up to normal to compensate for rapid wear when running over mountainous roads, the adjustment taking hardly a moment's time, and requiring no dismantling of parts.

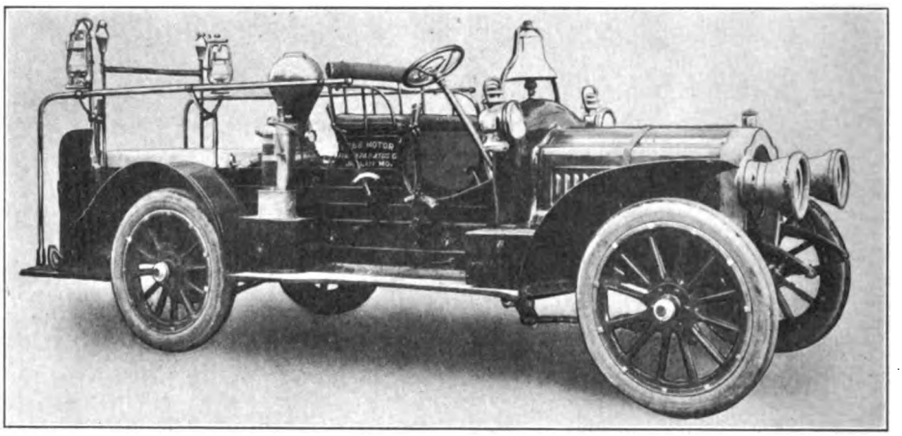
Strut Rods on Front Axle.

Although the use of strut rods for strengthening the position of rear axle is practically universal, similar practice in the case of the front axle is seldom found, owing, in all probability, to the comparative freedom from racking strains which that member enjoys. Where light frame and spring construction is attempted, however, it becomes very desirable to increase the rigidity of the front axle in this way, and in one or two instances, noteably in the case of the 16 horsepower Ford cars, the method is used to advantage. One of the first instances of its use on a heavier car, however, is to be seen in a new 20 horsepower landaulette chassis which has recently been brought out abroad, in which added resistance is obtained by means of a couple of struts running from the steering yokes on the ends of the axle to the sides of the power plant casing, which is of the unit type, the point of attachment being about midway between the clutch and the forward universal joint of the propellor shaft. This tends to relieve some of the srtain upon the springs due to road shocks received by the wheels, as well as providing for a true radial motion.

WEBB MAKING FIRE ENGINES

Former Racing Man Locates in Missouri—Shows Them How to Build Modern Fire-Fighting Apparatus.

A. C. Webb, the former well known automobile racing man, has turned from the sporting side of the motor car to the extremely practical one of fire fighting, and as head of the recently incorporated Webb Motor Fire Apparatus Co., of Joplin, Mo., is demonstrating the virtues of a fire engine built on an automobile chassis and using the regular gasolene motor of the latter for operating the pumping mechanism.



WEBB'S AUTOMOBILE FIRE ENGINE

The fire engine, shown in the illustration, has a powerful rotary pump mounted on two cross frame members. A separate transmission system from the motor to the pump is provided, and this is controlled by a lever at the side of the driver's seat. The pump does not operate while the vehicle is on its way to and from a fire, but when the water is to be pumped, the gearing connecting the pump itself is thrown into mesh and action begins. Since the automobile fire engine may at times be called upon to stand for hours and pump at high speed, Webb has devised an ingenious method of keeping the motor cool despite the absence of the current of air through the radiator which the latter would get if it were traveling along the road. When the gearing is shifted to throw the pump into action the radiator is automatically cut off from the motor, and the latter is supplied with cool water for its jackets by a special feed from the rotary pump. Upon the pump gearing being thrown out of mesh, the radiator is automatically reconnected with the motor and is ready for the resumption of its duties.

Experiments at Buffalo have shown the automobile fire engine to great advantage. Members of the Buffalo fire department were recently given a demonstration at the plant of the E. R. Thomas Motor Co., and the outfit threw a stream of water completely over a three-story building. The fire engine, while mounted on a Thomas Flyer chassis, as are all of Webb's apparatus, was equipped with a smaller pump than the size now employed, so that even greater performance is possible with the models now being turned out.

Features in a Foreign Innovation.

Second to its motor, the most remarkable feature of the 20 horsepower Valveless car, a British innovation just announced, is the frame and rear axle construction, which, to say the least, is unique. The use of pressed sheet steel which forms the frame, has been carried to the axle housing, the floating drive idea being utilized, but in somewhat modified form. Four members of channel shape are riveted together in the form of a trapezoid, having its longest diagonal in line with the axle and its shortest vertical and intersecting the differential casing. The driving axle shafts are unusually large, and are exposed for a considerable portion of their length. The differential casing itself, is extended forward with a rectangular section, and forms at once a torsion member and housing for the driving chains of which there are two, one corresponding to each of the two forward speeds. The motor is the Lucas two-cycle, which comprises two vertical cylinders, joined by a common combustion chamber, and therefore having coacting pistons. It is placed in the center of the chassis and drives direct to the axle through one or the other of the two chains which afford different ratios of speed reduction.

Position of the Carburetter.

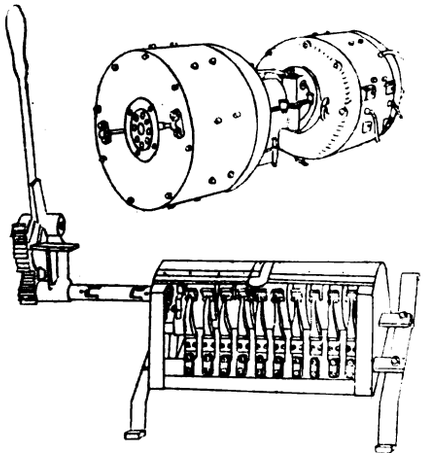
A question which has never yet been fairly settled is that of the proper position for the carburetter. One of the new foreign cars this year has its carburetter placed above the tops of the cylinders. Another has for several years carried it on a level with the inlet valves. Most designers, however, place it well down, in order to get a good flow from the tank.

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CONCERNING 1908 COLUMBIAS

Combined Electric-Gasolene Car to be Strongly Featured—Noteworthy Improvements Made.

Mark 66-3, which will be the topliner of the 1908 offering in the Columbia gasolene line, is a machine of generally standard outward specifications, driven by a four-cylinder motor of 48 horsepower, A. L. A. M., rating, and equipped with the direct connected electric transmission, which was brought out last year in a previous model sold under the same characteristic. The new Mark 66, however, differs from its

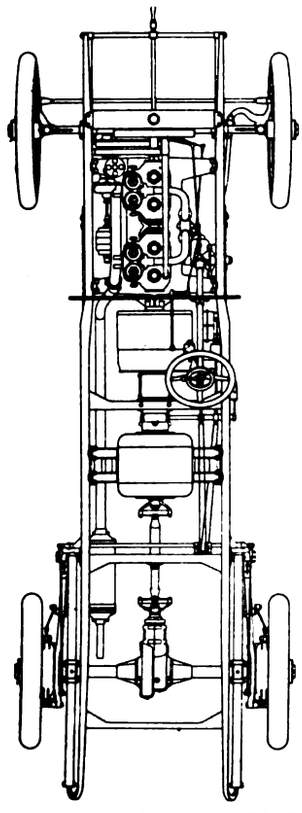


ELECTRIC TRANSMISSION AND CONTROLLER

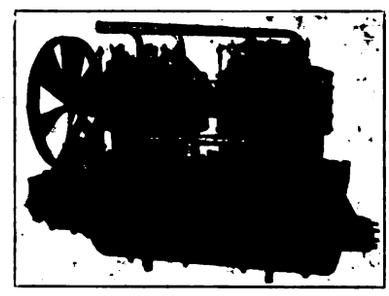
forerunner in many respects affecting both the motor and chassis. The transmission remains practically unchanged. The second and only other gasolene car to be built by the Electric Vehicle Co., at its great Hartford (Conn.) plant during the coming year, will be the light four-cylinder car of 28 horsepower, which corresponds to a similar model of last year, but has an increased engine power, and a number of structural improvements worthy of note.

In general appearance Mark 66-3 is a large seven-passenger touring car of what might be termed the rationalized conventional type, having long wheel base, roomy body extending well over the rear axle, plow-share mud guards in front, luggage rack in the rear, and drawn up in rigid conformity to the principles of the "straight line" school of design. Its aspect in no way suggests any unusual mechanism, and, in fact, except for its size, its only distinguishment from Mark 48-2, the smaller car, lies in the absence of gear shifting and emergency brake levers, which are replaced by the single controller handle and one other controlling member which stands vertically at the side of the car in place of the ordinary brake lever.

The motor, which is entirely new, and which mounts enough "features" in itself to make it worth considerable study, has cylinders 5½ by 5½ inches, bore and stroke, cast in pairs with jackets integral and of liberal and inclusive proportions. Contrary to the practice of last year, both sets of valves are placed in pockets on the left side of the machine, the exhausts being worked from below and the inlets from above, by means of vertical pushrods and short walking beams. A novel feature of the arrangement is the provision for lubricating the valve stems on the inlet side, to prevent binding. The spark plugs are located between the valves and are liberally cooled by the jackets. Only the multiple jet carburetter occupies the right side of the motor. This is of the same type as was used on all Columbia cars last year, with the slight modification of a needle float valve used in place of a ball valve. Upon the left



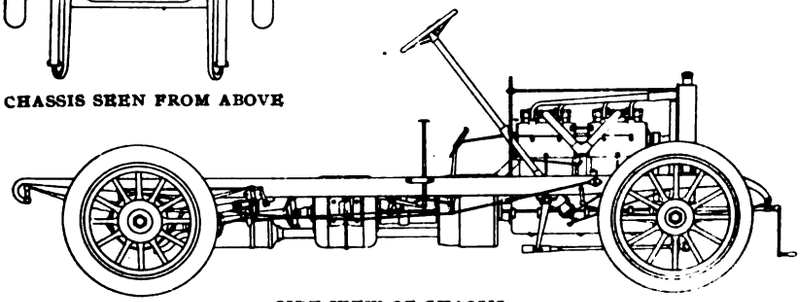
CHASSIS SEEN FROM ABOVE



LEFT SIDE OF MOTOR

tor. Lubrication is by pressure feed from a sight feed tank mounted on the dash, the internal engine bearings also receiving a liberal oil bath from the crank pit, which is assisted by the action of scoops fastened to the ends of the connecting rods. The drainage from the engine bearings also being returned to the crank case, tends to keep that supply constantly up to its normal requirement. The cam surfaces constantly are covered with a film of oil, the effect upon the rollers carried by the followers being that of a cushion which absorbs a portion of the shock of impact and reduces vibration very materially.

The transmission, about which interest in the car centralizes, consists essentially of two independent and corelated organs, namely the motor and generator, the latter performing normally the function of a magnetic clutch. Attached directly to the engine crank shaft, and taking the place of the ordinary fly wheel is an annulus containing the windings of the generator fields. The armature is mounted within, on a secondary shaft, normally connected directly through to the propeller shaft, the driving bevels, and so to the live rear axle forming what is in every sense of the word, a direct drive. At the same time there is no mechanical connection between engine and



SIDE VIEW OF CHASSIS

are the timing and governor gears, the half-time shaft, centrifugal circulating pump and magneto.

Ignition is by high tension magneto, with single coil and auxiliary, to distributor and timer. The construction of the latter is such that neither primary nor secondary wires move when the time of sparking is advanced or retarded. A high tension Gianoli magneto also is provided, making thus two systems of ignition using but a single set of plugs, and a common distribu-

transmission, the air gap between the fields and armature of the generator serving to permit absolute freedom of motion between them except as they are restrained by the torque developed by the magnetic attraction.

In this relation, the motion of the fields creates a drag in the armature, which depends upon a very slight amount of relative motion between them, and is proportional to the amount of power developed by the engine. A fixed amount of "slip" between

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driving and driven elements is thus developed, which is required for the generation of the energizing current. Under these circumstances, the speed of the car bears a definite relation to that of the motor, but in the event of the motor being slowed down, the variation in relative speed between the two elements serves to release them, in case their speed is equalized, or to act as an automatic brake in an extreme case, where the car overruns the motor, the action being reversed and the car tending to drive the engine, as is the case with the ordinary type of clutch.

For obtaining the speed reductions and power multiplications corresponding to the relations obtained with the lower gears in the ordinary type of transmission, the current from the generator-clutch is directed through the windings of the motor. At such times the "slip" between the driving and driven elements is increased, the energy which with the ordinary clutch would be absorbed in the heat of friction, in this case being converted into electric current, and used in energizing the motor and aiding in the propulsive effort. A variety of combinations are obtainable in this way by the use of a controller similar to that used in the ordinary electric vehicle, and a wide range of speed changes thus obtainable, the generator is released from the main shaft of the car and is clutched in a fixed position. The generator thus assumes the work of an ordinary dynamo, and the current it produces is utilized in driving the motor in either direction, according to the disposition of the controller lever.

Among the special features which have been applied in the chassis construction designed for this machine, may be mentioned briefly the rear axle driving group, in which all adjustments may be made from outside the case, the use of a special type of propeller shaft having a double spline provision in the slip joint, a novel form of radius rod, and a heavily trussed frame.

As to the smaller car, the engine has been enlarged, the cylinders now measuring 4¼ by 4½ inches, bore and stroke. The water jacket areas have been increased, while the firing holes of the make and break ignitors have been reduced in size, and to obvious advantage.

The half-time gears are now fully encased and run in oil, and the water piping has been rearranged. As for the transmission, the change gear shafts now run in annular bearings, the clutch diameter has been increased, the wheels have been enlarged to 34 inches, front and rear, while the mechanism of control has been improved by the adoption of a larger steering wheel than has been used heretofore.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

MISPLACED LOADS ON THE CAR

Bad Effect of Added Stress on Steps, Guards and Wings—Errors of Users that Reflect on Makers.

From the fact that such parts of the car as the steps, the guards and wings which serve to protect the sides of the vehicle from the side slung mud from the wheels, as well as the protecting strips between the running boards and the chassis, are not called upon to carry any load except that of their own weight when the car is in service, or at the most a very light load, such as tool and battery boxes, many designers fall into the error of making their supports far too light. As a result of this they are prone to excessive vibration, and frequently tend to work loose after a short period of use, developing a disagreeable rattle and ultimately requiring repairs or replacement far sooner than should be the case.

The point which seems difficult for the average user to grasp in this connection is that the static load which a part may carry when the car is at rest has absolutely no relation to the stress which may be thrown upon it when the car is in motion, and further, that where there is the slightest leeway for vibration or oscillation under such circumstances, the racking strains developed are greatly multiplied by the frequency and variety of the minor movements to which the vehicle is subjected. The lack of appreciation of this fact in the case of the user, is shown by the way in which spare parts are disposed about the car without regard to their effect upon the running stresses which they are likely to set up in the parts to which they are attached. The same lack of appreciation is shown by many designers in the use of mud guard and running board supports which are altogether too light, either to support their own weight with proper stability, or to carry the extra load which is apt to be put upon them by the heedless user.

On this account such parts, and more especially the running boards, should be supported with sufficient stability to carry far more than their nominal loads, not simply as a safeguard against absolute breakage under sudden shock to the vehicle, but also with an eye to checking that vibration which is almost certain to produce a disagreeable noise sooner or later More than that, such receptacles as the battery and tool boxes should be secured in such a fashion that they cannot break away from their fastenings under any circumstances, and so that in the event of their being overloaded, the resulting strains will not be likely to disturb the supporting member. The designer cannot be blamed if a failure occurs through misuse of the machine in any way. But the fact remains that such failure invariably redounds more or less to his discredit. It is not a question of cost or excessive weight, but of sound judgment.

Setback for Advocates of Alcohol.

Advices from Washington concerning results of the official tests being conducted by the government at the Jamestown Exposition as to the relative cost and efficiency of gasolene and alcohol say that the results are a disappointment to the alcohol enthusiasts.

For six weeks a Federal experimental station at the Exposition has been making comparative tests of the two fuels, the work being in charge of R. M. Strong and under the general supervision of Joseph A. Holmes, chief of the technologic branch of the United States geological survey, and H. H. Wilson, chief engineer. The general results of the tests so far, roughly indicated, show that it takes about a gallon and a half of alcohol to do the work of a gallon of gasolene. Inasmuch as denatured alcohol costs about twice as much as gasolene at the present time, the newer fuel is at a decided disadvantage.

The denatured alcohol advocates maintain that improved methods of using it are both possible and probable, and that the price is bound to drop as its use grows and the farmers begin distilling in large quantities from farm refuse. Although it is at present quoted at 30 cents per gallon, the opinion is expressed that its future price will be in the neighborhood of 10 or 12 cents, and that in spite of the unfavorable showing in the government tests on the basis of cost, there is a great future before it. The tests will be extended to other fuels.

American Ideas Catch on Abroad.

After several years of scoffing at the friction transmission, among other so-called Americanisms in the way of automobile design, England is now in a fair way to have a friction driven car, the transmission of which in many respects is a close counterpart of one which has been in use in this country for several years. Air cooling has almost ceased to be taken as a joke in Great Britain by this time, and one of the newest of the season's new cars, is equipped with a two-cycle motor. The trade as a class, however, still affects to look with some disdain upon American construction and methods of design.

Thomas to Quit Track Racing.

E. R. Thomas, the Buffalo manufacturer, has announced that after this season his company will have no more to do with racing on horse tracks. He gives as his opinion that such courses are unsafe and unsuitable. Before retiring, however, Mr. Thomas expresses a wish to have his car engage in one more 24-hour race, with particular reference to the two foreign cars that won the long grinds at Morris Park this fall. He has named H. S. Houpt, his New York agent, to act for him in arranging such a contest.

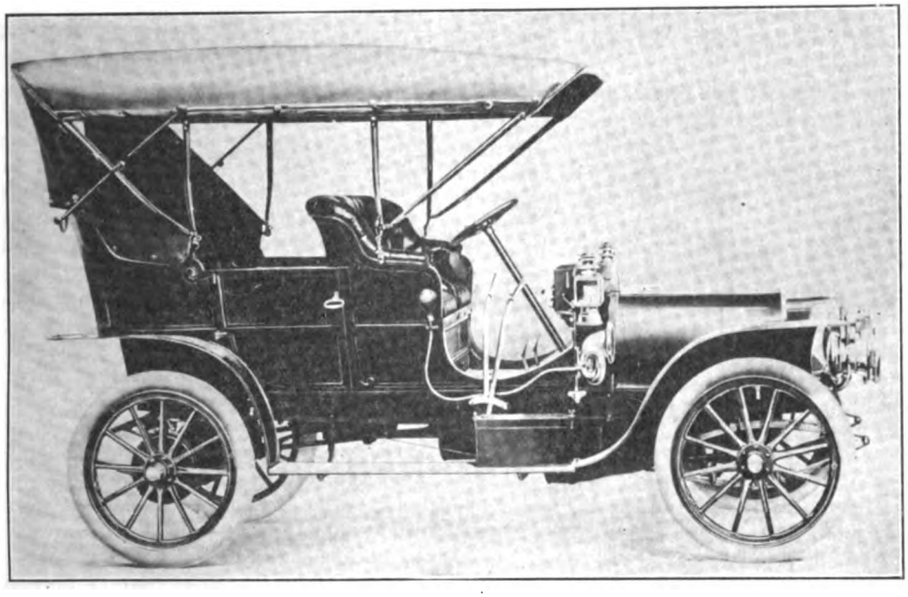
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FEATURES OF THE FRANKLIN

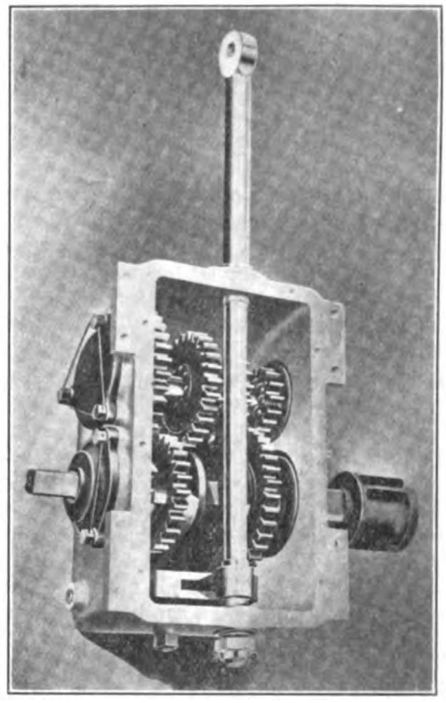
Concentric Valves Constitute Radical Innovation—Other Parts in Which Air Cooled Cars Are Bettered.

A number of alterations in the construction of the engine, amounting practically to a redesign of that important organ, thus permitting the development of new horsepower ratings for all types; the use of an entirely new type of selectively operated change speed gearing on the two larger models; as well as a number of less important improvements, serve to create entirely new standards for the 1908 Franklin line. As heretofore, the Syracuse (N. Y.) plant of the H. H. Franklin Manufacturing Co., will be devoted to the construction of three main types of chassis, two having four-cylinder motors, and one a six, to which various sorts of bodies will be applied according to the numerous uses to which they are applicable.

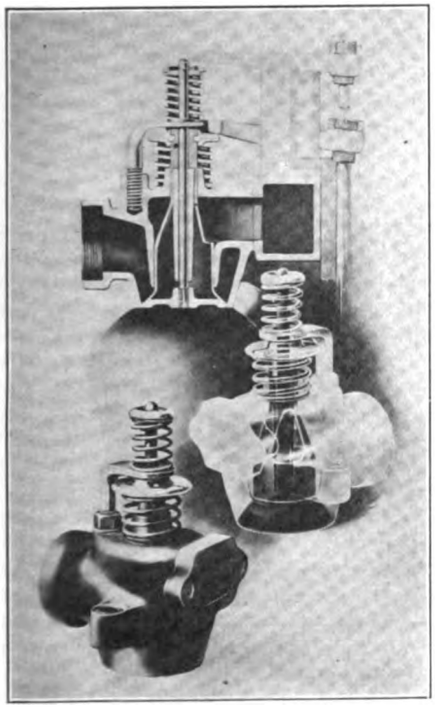
The most remarkable feature of the new engine construction is the use of a type of concentric valve which is entirely novel, and which besides generally simplifying the mechanical construction of the cylinder units, permits the adoption of the hemispherical formation for the combustion chamber, carrying with it sundry thermal advantages, held to be very great. The inlet valve, seating directly in the cylinder head in a cage of special construction, instead of taking the familiar mushroom form, consists of a hollow sleeve having a conical or funnel shaped head, and fitting closely a guide above, which separates the inlet and exhaust ports in the cage. It also carries a second guide which directs the stem of the exhaust valve, the latter being a rider in the inlet and opening communication from



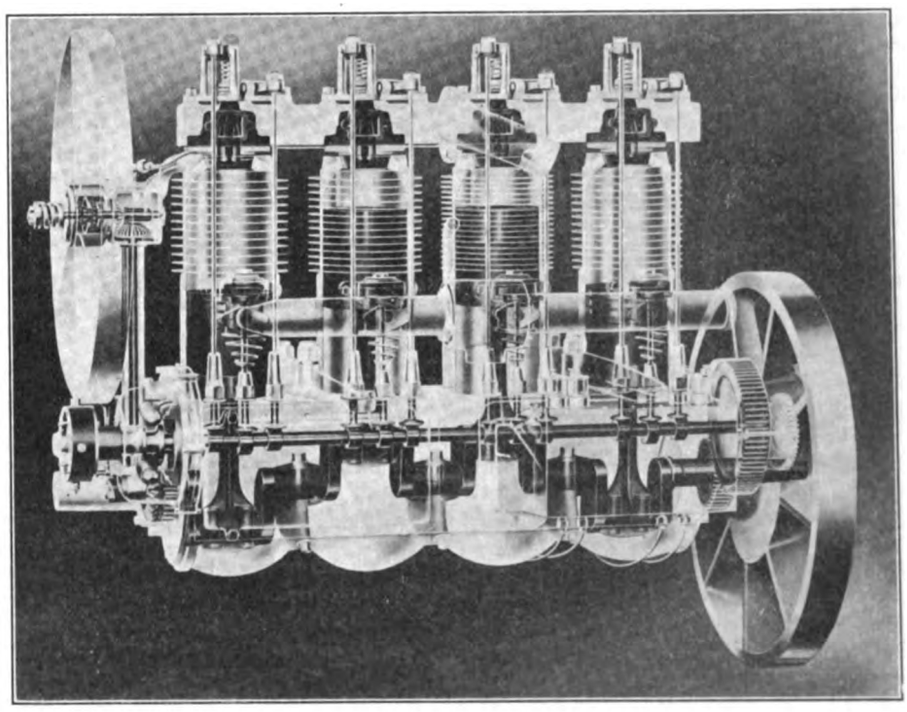
FRANKLIN TOURING CAR



FRANKLIN CHANGE SPEED GEAR



FRANKLIN CONCENTRIC VALVES



FRANKLIN MOTOR

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the cylinder to the exhaust main through the hollow interior of the inlet. Both valves are actuated independently of one another, from above, and in the usual way, the two members acting in unison to secure the inlet relation, and the inner member alone being operated to secure the exhaust. In using this method of distribution, considerable advantage is secured by the use of the auxiliary exhaust ports in the cylinder walls at the end of the piston travel, through which some three-fourths of the charge is delivered before the release of the main valve.

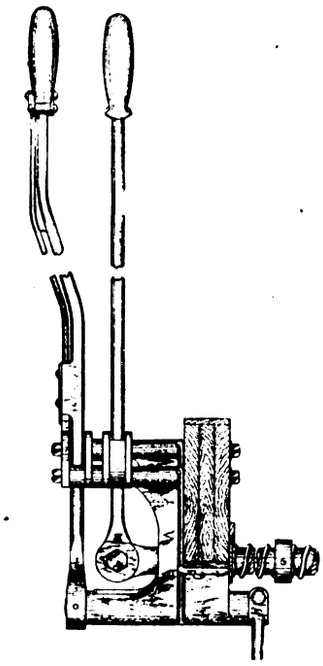
The use of an oil baffle plate at the base of each cylinder for the purpose of controlling the splash lubrication—an innovation last year, is continued. The phosphor-bronze radiating flanges are shrunk in place on the cylinders, a special feature, also continued from last year, being the use of different numbers of flanges on different cylinders, thus proportioning the radiating surface to the amount of air circulation which it is destined to receive, as measured by its distance from the front and rear fans. Of the latter, the forward member is gear driven from the crank shaft, and rigidly mounted in front. The second is made integral with the fly wheel, and exercises simply a suction effect in assisting the work of the other. The two-to-one gearing is placed at the rear of the motor, and is completely enclosed. and protected.

The new features in the carburetter comprise the use of a novel type of jet, which has a number of forked branches and a multiplicity of orifices, thus tending to encourage the intermingling of the ingredients of the mixture; a rearrangement of the float and mixing chambers, the latter now partaking of the nature of the Venturi tube, and a new method of supplying warm air to the carburetter. This comprises a heat collector, surrounding the exhaust box, and a feed pipe leading to the carburetter.

Another new departure is found also in the construction of the timer which is of entirely new design, and is "non-wearable" as well as non-adjustable. Contact is made between a hardened steel roller and segments of the same metal, the latter being insulated by means of air gaps instead of fibre as is more commonly employed for the purpose. Another improvement in the ignition systems applied to the two larger models this year, is found in the use of the Bosch high tension magneto. The smaller model still uses batteries as the source of its ignition current.

The multiple disc clutch arrangement is the same as that used on this year's cars. The change speed gear used on the larger cars, in addition to being extremely neat and compact, possesses a rather unusual feature in the shifting arrangement. For this, the usual gridiron segment has been dispensed with, the shifting lever instead, riding on a simple segment about which it is pivoted in order to secure the selective motion of the single gear striking rod. A couple of springs surrounding the latter member, serve to keep it normally in the central or neutral position, from which it is displaced by the operator in order to make the gear selections. This arrangement, together with the neat design of the emergency brake lever, makes a particularly simple and effective lever group at the side of the machine.

The three models produced this year will be of 16, 28, and 42 horsepower, respectively, corresponding to the 1907 ratings for the corresponding machines of 12, 20, and 30 horsepower, respectively. The increased powers are attributable to the general improvement in the construction of the machine, to which also the lighter weights of the motors made possible by the new design should add in net output. Mainly, however, the increase is secured by the new valve construction, which in addition to its theoretical advantages, has proved to be of great practical benefit.



FRANKLIN CONTROL LEVER

Witherbee Produces New Spark Plug.

Having for some seasons supplied motorists with the "juice" end of their ignition outfits, in the way of accumulators, the Witherbee Igniter Co., New York, now is supplying plugs for the cylinder end of the ignition circuit. The new plugs take their name from the initials of their manufacturer and are called "Wico" plugs. The most novel feature of their construction is the incorporation of a micrometer attachment, from the readings of which the motorist may separate the points to any predetermined distance with an exactitude which is calculated to insure good results. The readings run as fine as a thousandth of an inch. Thus the gap may be adjusted to any condition of compression or current. The insulating porcelains are easily removed in their brass carriers, for cleaning, and are as easily put back without altering the adjustment. The sparking end is formed to act as a clearing syphon.

Position of the Fuel Tank.

One of the strongest arguments advanced against the rather popular method of feeding the carburetter from a low tank by means of pressure taken from the engine exhaust, is based upon the assertion that the gases tend to mingle with the fuel thus carrying over into the mixture a certain proportion of unburnable gas which, however low, yet acts as an undesirable and inert diluent. It is well known that all liquids are subject to a certain amount of aeration, and the fact that the fuel in the low-hung tank is constantly being agitated when the car is in motion, coupled with sundry otherwise inexplicable shortcomings of the system, lends color to the idea. On this basis, the more complicated method of using pure compressed air, has very obvious advantages.

It is a well known fact that with the ordinary type of gravity flow fuel tank mounted under the seat and feeding the carburetter through a low head, steeply pitched hills have a marked effect on the behavior of the motor, owing to variations in the fuel pressure in the float chamber. In all probability, however, the average owner fails to consider that as fast as the fuel is used from the tank the head is proportionately lowered, so that not alone is the effect of grades affected by low fuel in the tank, but also in some measure, the performance of the machine on the level. The absolutely constant pressure supply system is yet to be developed.

Just a Question of Etiquette.

Motoring etiquette has been accustomed to demand that the chauffeur shall stand either directly in front of his car or immediately at one side of the bonnet while waiting for the owner. It is perfectly evident that this custom is as antidiluvian and seedy as the hitching post at the present time, however. For every up-to-the-minute and particular motorist drives a car which has a self-starting motor. Putting the chauffeur out in front indicates that the motor must be cranked before starting Hence even those owners whose motors still require the preliminary wind-up before setting about their business, should assume that attitude of gentle prevarication, known as a bluff, and let the driver remain seated at all times or at least, until it becomes necessary to give away the secret.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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MILLIONS OF MILES OF ROADS

Progress in Work of Improvement—Where Advance Has Been Made—Indiana Has Most Good Highways.

While it is known in a general way that some parts of the country have made greater progress than others in the improvement of the public roads, and that enormous sums are expended annually on road construction and repairs, there has been no information compiled up to the present time showing just what has been accomplished and how much is expended annually for this purpose in the United States, says a Washington correspondent. A few of the States have published reports giving some information upon these subjects, but only in rare cases have they shown the mileage of improved roads or the road expenditures by local authorities.

The office of public roads in the Agricultural Department has just completed the collection, compilation and publication of information from every county of the United States in regard to the mileage of improved and unimproved country roads in the year 1904, and the expenditures on roads and bridges from property and poll taxes, bond issues, and State funds under the State-aid laws, and the amount of value of the labor expended under the statute-labor laws.

In 1904 there were 2,151,570 miles of public road in the United States. Of this mileage, 108,232.9 miles were surfaced and gravel; 38,621.7 miles were stone, and 6,809.7 miles were special materials, such as shells, sand-clay, oil, and brick, making in all 153,664.3 miles of improved road. From this it follows that 7.14 per cent. of all the roads in this country have been improved.

By comparing the total road mileage with the area of all the States and Territories it appears that there was 0.73 of a mile of road per square mile of territory. A comparison of road mileage with population shows that there was one mile of road to every thirty-five inhabitants, and one mile of improved road to every 492 inhabitants.

The majority of all the roads in this country were originally laid out along the boundary lines of farms, with little regard for drainage, topography, and alignment. In the Eastern States the boundary lines of farms were very irregular, and consequently many of the roads are crooked and badly located with reference to grades. In the Middle West, where the land was laid out by the Government, the roads follow the section lines, and in thickly settled communities, the quarter-section lines. In compiling these figures, the aim has been to include only the mileage of roads actually open and in use.

Only four States have more than 100,000 miles of roads. Texas stands first, with 121,409 miles; Missouri second, with 108,133; Iowa third, with 102,448; and Kansas fourth, with 101,196. The District of Columbia has only 191 miles of road, Rhode Island has 2,361 miles, which is the smallest mileage of any State. Delaware has only 3,000, and Arizona only 5,987 miles.

By comparing the road mileage with the areas in square miles, the District of Columbia is found to stand first, with 3.18 miles of road per square mile of area, while Connecticut is highest among the States with 2.90 miles. Rhode Island has 2.24 miles, Pennsylvania 2.21 miles per square mile of area. Arizona has only 0.05 of a mile, the smallest mileage per square mile; Utah has 0.08 and Wyoming 0.10 of a mile per square mile.

Assuming the average width of the rights of way of country roads in the United States to be 40 feet, the area of such rights of way in 1904 amounted to 10,431,727 acres. Estimating the value of this land on a basis of the valuation of farm lands in each State, the approximate value of the rights of way of all the public roads would be $341,899,306. A much higher valuation would be amply justified by the fact that in sections where the mileage of roads is greatest the land is considerably above the average in value.

It was generally believed at the time when railroad building was first undertaken in this country that the railroad would supplant the wagon road, and this line of reasoning accounts in a large measure for the neglect of the common roads from about 1835 until about 1890. The necessity for the improvement of the common roads is impressing itself upon the people more now than at any time in the history of the country. The mileage of public roads is greater now than it has ever been, and the extension of railroad and trolley lines has induced such an amazing development of the country's resources as to bring about a remarkable increase in traffic over the common roads. The heads of the great railroad systems are now seriously directing their efforts toward securing the improvement of the common roads, which they recognize as feeders to their railroad lines. For every mile of railroad we have about ten miles of wagon roads.

Of the 153,662 miles of improved roads in the United States, Indiana has the largest mileage—that is, 23,877 miles. Ohio occupies the second place, with 23,460 miles. Wisconsin is third, with 10,633 miles; Kentucky fourth, with 9,486 miles; California fifth, with 8,803 miles. Illinois, Massachusetts and Michigan have over 7,000 miles each; Minnesota over 6,000 miles; New York over 5,000 miles; Tennessee over 4,000 miles; Connecticut, Maine, Missouri, New Jersey, Oregon, Pennsylvania, and Texas, over 2,000 miles each; and Alabama, Georgia, Iowa, Maryland, New Hampshire, North Carolina, Rhode Island, South Carolina, Vermont, Virginia, and Washington, over 1,000 miles each of improved roads.

In about two-thirds of the States, gravel has been the principal surfacing material used in improving the roads. The largest mileage of gravel roads was found in Indiana, Ohio, Wisconsin, Massachusetts, Michigan, Minnesota, Illinois, and California. In eight States the mileage of macadam roads exceeds that of gravel, and in a few others it is nearly equal. Kentucky has the largest mileage of road surfaced with stone—over 8,000 miles—and Ohio is second with a little over 7,000.

By comparing the percentage of roads improved with the population per mile of road, it will be noticed that in most cases the States which have the highest percentage of improved roads have the largest population per mile of road, and vice versa. While it cannot be claimed for improved roads that they invariably lead to an increase in population, good roads are certainly a powerful factor in encouraging immigration, especially in sparsely settled regions.

The percentage of improved roads in any community or State depends upon a variety of causes, the most important of which which may be summed up as follows: (1) Availability of suitable road-building material; (2) wealth of the State in agriculture, manufactures, transportation, etc.; (3) requirements of traffic. Prosperity promotes a desire for the advantages and benefits to be derived from the improvement of the roads; but whether a community is rich in agriculture or otherwise, If it had to depend on materials imported from distant places, progress in the improvement of the roads will be much slower than if local materials are abundant.

There are several other reasons why the percentage of improved roads is higher in some of the States than in others. The high percentage of improved roads in Massachusetts, Rhode Island, Connecticut, and New Jersey is due principally to the facts that suitable road-building materials abound, that these States are densely populated, and that many of the roads have been built through the aid of the States and under the direction of competent State authorities. Indiana and Ohio have an unusually high percentage of improved roads, because the social and economic conditions were favorable to the making of public improvements.

A comparison of the percentage of roads improved with the acreage values of farm lands in the United States, shows that the average percentage of the improved roads in all States where the land is worth less than $20 per acre is 1.9 per cent., whereas in the States showing an acreage value of more than $20, improved roads constitute an average of 9 per cent, of the total mileage. Expressed inversely, the States showing a high percentage of improved roads have on the average relatively high acreage values, while those showing a low percentage have low acreage values.

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SKILLFUL FUNMAKING AT NEWTON

Gymkhana Meet Attracts a Large Attendance—Clever Work in Series of Amusing Stunts.

While jobless policemen looked on and grinned, automobiles raced around a quarter mile track backwards, smashed barrels to smithereens and performed many other novel stunts for the edification for a large crowd at Newton, Mass., last Saturday, 12th inst., the occasion of the second annual gymkhana games of the Bay State Automobile Association. The severa levents were contested on the old Newton athletic grounds.

The first event was a rather mild contest but it was one in which the policemen took a lot of interest. The contestants drove once around the track at the nearest to a 12-miles an hour pace they could judge, and to have made this pace exactly would have required 90 seconds. Harry W. Knights, Pierce Arrow, won in a walk in 90⅗ seconds, which is certainly a feat in accurate pace judgment.

How quickly a driver can bring his car to a stop when going 15 miles an hour was demonstrated. A pistol shot marked the instant to apply brakes and at the same time a small bag of flour was dropped from the car to mark the exact spot. J. L. Snow brought up his Peerless in 18 feet 4½ inches, winning by a jerk.

Walter Schmunk was the best cigar lighter and pufffed around the track in 58⅗ seconds. He also finished first in the obstacle race, in which the cars had to tag each barrel in two rows without knocking it over. The backward race was awarded to Schmunk, as was the "man-killing" race, in which the barrels were all knocked down in the least possible time. He drove a White. Ralph Coburn guided his Maxwell through two rows of barrels without touching one and so got a cup for his expertness.

The summaries:

Speed judgment contest, at 12 miles an hour (90 seconds required time)—Won by Harry W. Knights, Pierce Arrow; second, A. A. Knights, Oldsmobile; third, F. A. Hinchcliffe, Winton. Time, 0:90⅗.

Stopping contest, at speed of 15 miles—Won by J. L. Snow, Peerless; second, Ralph Coburn, Maxwell; third, R. R. Ross, Peerless. Distance, 18 feet 4½ inhces.

Cigar lighting contest—Won by Walter Schmunk, White; second, F. A. Hinchliffe, Winton; third, R. R. Ross, Peerless. Time, 0:58⅗.

Barrel touching contest—Won by Walter Schmunk, White; second, S. H. Baker, Stevens-Duryea; third, Ralph Coburn, Maxwell. Time, 2:13⅕.

One-quarter mile backward race—Won by Walter Schmunk, White; second, R. R. Ross, Peerless; third, J. L. Snow, Peerless. Time, 0:44⅗.

Expert driving contest—By Ralph Coburn, Maxwell; second, A. A. Knights, Oldsmobile; third, Walter Schmunk, White. Time, 0:17.

"Man killing" race—Won by Walter Schmunk, White; second, R. R. Ross, Peerless; third, J. L. Snow, Peerless. Time, 1:40⅗.

Club Aids Street Improvement.

Macadam will displace the mud of Euclid avenue, from the village of Euclid, Ohio, to the county line, through the efforts of the Cleveland Automobile Club. The club has provided $20,000 and the village of Euclid an additional $15,000, the club in addition guaranteeing to make good any deficit up to $5,000. The contract for the work of macadamizing the road has been given to Asa Goddard, secretary of the Cleveland A. C.

London's Modern Fire Apparatus.

Motor-driven fire fighting apparatus is rapidly gaining favor abroad. In addition to placing several machines in London, the famous house of Merryweather & Sons has recently sent a new gasolene driven engine to Glasgow, a steamer to Singapore, and a gasolene driven ladder and hose tender to Bombay. Steam engines have been ordered by the fire brigades of Londonnerry and Widnes, Ireland, as well.

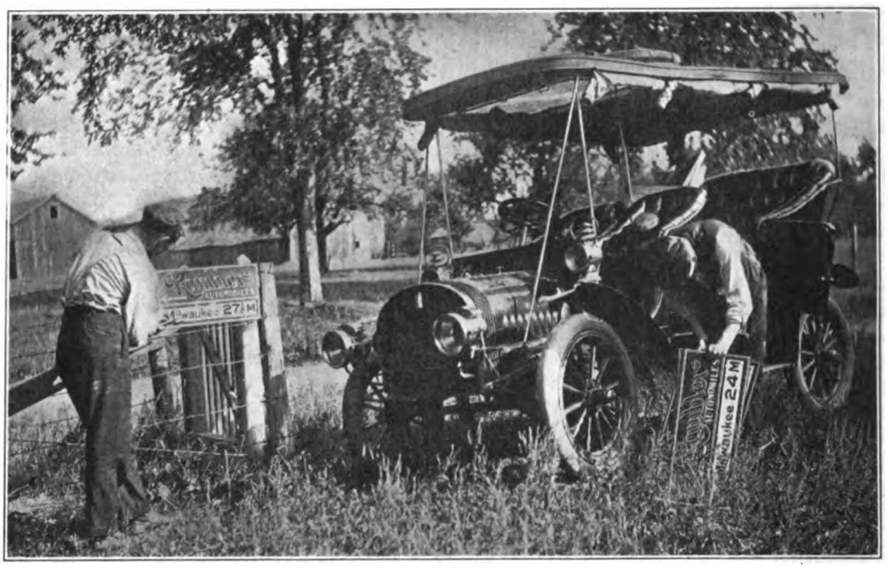
Minneapolis Suffering from Theft.

Minneapolis is contesting against a wave of automobile theft, despite the watchfulness of the special detective recently placed on duty by the local automobile club, to guard against this sort of thing. One night last week five machines were stolen, and all were found the following morning unharmed, except one, which had a punctured tire.

MARKING ROADS FOR TOURISTS

Jeffery Setting up Guideboards on Many Highways—Systematic Plan of Mark- in the Route Plain.

Although it is not generally known, Thomas B. Jeffery & Co., Kenosha, Wis., have undertaken a sign-posting campaign that now has reached proportions that command attention. The work has progressed so rapidly during the past month that 2,500 have already been put up in the touring districts of the Middle West. Another 2,500 are now awaiting shipment to Rambler agents for immediate placing. The



MAKING THE WAY OF THE TOURIST PLAIN

signs are of sheet steel, and, as shown by the accompanying illustration, are sufficiently sharp and clear to be seen from a great distance. The roads between Milwaukee and Chicago have already been well provided with them, while all the roads to the southern Wisconsin lake resorts, such as Lake Geneva, are thoroughly marked. The Oconomowoc lake region, which has many intertwining roads which are puzzling to the average driver, will be made clear to the motorists through the efforts of the Rambler Garage Co. of Milwaukee, who will superintend the erection of the signs in this district. The signs are usually placed on fences, but when solid supports are not available they are placed on special posts provided for such emergencies. The next few months will see the extension of these signs to roads in all parts of the United States.

Automobile Postage Stamp Arrives.

The automobile postage stamp has at last made its appearance. Bosnia and Herzegovina, has recently adopted a new stamp on which a motor driven mail van appears in bold relief.

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SCHLIPP'S THIRD RACE UNLUCKY

He Had Captured Two at the Chicago Meet —Lost Big Event Through the Breaking of a Tire.

Besides making the fastest time of the day at the much postponed meet of the Chicago Automobile Club at the Harlem track, last Saturday, 12th inst., Charles W. Van Sickle, of Hammond, Ind., gained the distinction of riding a motorcycle in the fastest mile ever made on an unbanked track. Van Sickle covered the distance in 56 seconds, but as intermediate miles are not recognized, and this was made during the course of a ten miles race, his wonderful performance will not be chronicled in the book of records. The meet was successful despite cool weather and two postponements, about 2,000 persons watching the races from the grandstands.

One accident, which resulted fortunately for the drivers involved, occurred to the big Stearns car in the half-hour race, the feature of the meet. C. P. Schlipp had created the sensation of the meet, by driving rings around the other contestants in the events to which he was eligible and was looked upon as a likely winner in the half-hour grind. He took the lead at the start of the race, but had gone only a mile before a tire gave way, and a portion of it flew up and mixed with the steering gear, causing the driver to lose control of the machine. It ploughed the fence and tore a tree from its roots, bringing up in a dense growth of brush. R. C. Chevalier, the mechanic, was thrown from the seat and fell on his chest, breaking his collar bone. Schilpp was uninjured and was calmly lighting his pipe when the track attendants reached the scene. The race was won by George Farnsworth, Cadillac, who covered 23¼ miles in the 30 minutes of riding. David Buck, Apperson, was a close second with 23 1-16 miles.

The three mile open for cars listing at $1,500 and under was won by R. L. Bartol, Ford, who beat Frank X. Mudd in another Ford, by a narrow margin. Farnsworth captured the five miles for cars under $3,000. The five miles restricted to Chicago A. C. members who are owners not connected with the trade, went to W. G. Lloyd, Stoddard-Dayton, with Frank Mudd, Ford, as the runner-up.

Prior to his accident Schilpp had captured two fast events—the pursuit race, in which he "tagged" David Buck, Apperson, after four miles were covered in 3:58, and the ten miles free-for-all, in which he covered the distance in 10:22.

Van Sickle was the star of the two-wheeled brigade who furnished plenty of excitement in three close races. In the ten mile open to machines not exceeding 30.65 cubic inchs cylinder displacement, Van Sickle won out over a large field in 12:46; he also won the three miles open for motorcycles of the same cylinder capacity in 3:33⅗. His fast mile was made on a twin Indian in the ten mile handicap, when he passed the seventh and remaining man in the last mile, which was made in 56 seconds flat, the fastest time ever made by a motorcycle on an unbanked mile track. Fred Huyck, Harley-Davidson, was the runner-up in the two open events, and E. L. Hess, R-S, secured the place in the handicap.

The summaries:

Ten mile open for motorcycles—Won by Charles W. Van Sickle, Indian; second, Fred Huyck, Harley-Davidson; third, G. Blankenheim, Torpedo; fourth, J. F. Alofsin, Racycle. Time, 12:46.

Three miles for cars listing at $1,500 or under—Won by R. L. Martol, Ford; second, Frank Mudd, Ford; third, E. W. Willett, Buick. Time, 4:40.

Five miles for runabouts listing at $3,000 or under—Won by George Farnsworth, Cadillac; second , E. W. Willett, Buick; third, E. W. Disher, Ford. Time, 6:36.

Three mile open for motorcycles—Won by C. W. Van Sickle, Indian; second, Fred Huyck, Indian; third, H. Bernard, Harley-Davidson; fourth, J. F. Alofsin, Racycle. Time, 3:33⅗.

Five miles for C. A. C. owners, not connected with the trade—Won by W. G. Lloyd, Stoddard-Dayton; second, Frank X. Mudd, Ford; third, C. E. Gregory, Thomas. Times, 11:57⅗, 12:05, 12:05⅕.

Unlimited pursuit for stock cars—Won by C. E. Schlipp, Stearns; second, David Buck, Apperson; third, E. W. Disher, Ford. Distance, 4 miles. Time, 3:58.

Ten miles free-for-all, handicap for motorcycles—Won by C. W. Van Sickle, Indian; second, E. L. Hess, R-S; third, Harvey Bernard, Harley-Davidson; fourth, J. F. Alofsin, Racycle. Time, 11:09.

Ten miles free-for-all—Won by Charles Schilpp, Stearns; second, David Buck, Apperson; third, George Farnsworth, Cadillac. Time, 10.22.

Half-hour invitation—Won by George Farnsworth, Cadillac; second, David Buck, Apperson. Distance, 23¼ miles.

One mile exhibition—By David Buck, Apperson. Time, 1:05⅕.

Plans Gasolene Supply Station.

Cleveland drivers will not have to walk a mile or more for gasolene if the tanks go dry, if the proposition of Frank B. Many is accepted by the Board of Elections of that city. Many proposes to use the voting booths for gasolene stations, fitting a dozen or more with permanent gasolene tanks supplied with nickel in the slot arrangements, whereby one may purchase any amount of gasolene by dropping a coin in the slot. He offers to rent the booths at a consideration that would pay for them in three years; it is said that the proposition is being carefully considered.

NASHVILLE SEES GOOD RACING

Christie's Nephew Proves Himself a Speed Merchant—Jack Prince Gets into Automobile Sport.

Lewis Christie Strang, a nephew and understudy of Walter Christie, broke into the automobile game as a driver of real racing cars at the meet at historic Cumberland Park mile track, Nashville, Tenn., last Friday, 12th inst. He made an auspicious debut, driving an exhibition mile in 54 seconds, within one second of the world's record. Simultaneously, John Shillington Prince, the dean of bicycle race meet promoters, made his entrance into automobile racing circles, for he it was who arranged the meet. "Jack" Prince has not conducted a bicycle meet for some time, but has been making money fast in Nashville with a skating rink, and it has been a mystery to his acquantances how he so long has kept his hands out of automobile sport.

The meet also emphasized the fact that Barney Oldfield, who is invincible for the reason that he has not allowed himself to meet any one in a match except by his own arrangement, is afraid of Walter Christie. Since W. H. Pickens, Oldfield's former manager, took hold of Christie, to recuperate his own fortune and also Christie's, he has been trying to "make Oldfield look like thirty cents," to quote Pickens himself. He almost accomplished it at Pittsburg, when unbeknown to Oldfield he took Christie to Brunots Island track and planned to have his "star" ride rings around Oldfield. Only the unfortunate accident to Christie prevented the carrying out of his plans. Oldfield got very much ruffled, so ruffled, indeed, that he sought Pickens in the Fort Pitt hotel and a fistic encounter ensued, which was broken up when bystanders parted the belligerents.

Ever since, Pickens has been gunning for Oldfield and when he learned he was to compete at Nashville he made arrangements for Christie to appear there also. When he heard of it, Oldfield cancelled his contract and failed to appear. Christie had not fully recovered from his Pittsburg injuries so he entrusted his car to Strang for a mile trial. Although the track is not the best in the country the young understudy covered the distance in 54 seconds. This led Christie to publicly challenge Oldfield, stating that he will wager $1,000 that Oldfield cannot duplicate Strang's performance, and $5,000 that Oldfield cannot beat either Strang or himself in a five mile race. Christie offers to give Oldfield a quarter mile start, but no one has made it clear where the $5,000 is coming from.

The five mile touring car open was well contested by local drivers. Green driving a Wayne and Yowell in a Pope-Hartford, raced neck and neck for four miles, and the

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former won out by less than a length on the tape. A handicap match between a Ford and an Oldsmobile was won by the latter. The summaries:

One mile exhibition—By Lewis C. Strang, Christie. Time, 0:54.

Three miles against time—By L. C. Strang. Time by miles, 0:57, 0:55, 0:54.

Five miles open, for touring cars—First heat, two miles, won by Joseph Yowell, Pope Hareford; second, Edward Sweeny, Stevens-Duyrea. Time, 2:55. Second heat won by Newman Hill, Pope-Hartford; second, Joseph Roller, Rambler. Third heat won by John Green, Oldsmobile; second, J. C. Sims, Ford. Time, 3:00. Final heat won by John Green, Wayne substitute; second, Joseph Yowell, Pope-Hartford; third, Newman Hill, Pope-Hartford. Time, 8:53.

Five mile match handicap—Won by John Green, Oldsmobile (scratch); second, Cleveland Sims, Ford (⅛mile). Time not stated.

Fix in a Series of Bad Fixes.

Albert Fix is in a fix himself through his ability to fix motor cars and for not fixing one as securely as he should have. Fix, who lives in Detroit, was employed by a Mrs. Wilson, of Lexington, Mich., as a chauffeur. He got $50 a month and expenses during the summer and when, a few days ago, his season's work was finished, he persuaded Mrs. Wilson that her machine was worth very little after a whole summer's use and bought it from her for the small sum of $125.

After talking the matter over with friends, Mrs. Wilson decided that she had sold altogether too cheaply, so she decided to get the car back again. Fix, who had not left Lexington, was locked up in his room at the local hotel by an officer, under the direction of Mrs. Wilson, who took this means to prevent his escape. Finding himself a prisoner, he kicked down the door during the night and escaped. When he learned that Mrs. Wilson wanted to have him arrested, he surrendered himself to a justice of the peace, but the latter refused to hold him on the showing made by the complainant. Fix then put the automobile aboard the steamer Flora and started for Detroit. During a storm, the boat gave such a lurch as to send the car plunging out of the gangway into the bottom of Lake Huron, where neither Fix nor Mrs. Wilson will ever be able to find it. Blue with the results of the trip, Fix had further troubles when he got to Detroit, being arrested there when he stepped off the boat, on telegraphic advice from Lexington, where Mrs. Wilson had obtained a warrant against him.

By telling his hard luck story in full, Fix was able to fix it with the Detroit police so that he could have his liberty on the promise to appear at the police station when the officer from Lexington should arrive. It still remains for him to fix up matters with Mrs. Wilson, who has threatened to "fix" him.

OLDFIELD AMAZES TERRE HAUTE!

The "Star" and His "Satellite" Perform to the Delight of Hoosiers—Savin Wins One Event as Usual.

Before a crowd of 4,000 people at Terre Haute, Ind., Sunday of last week, 6th inst., Barney Oldfield broke a record. His "sensational" performance was not a world's record, however; Oldfield merely drove a mile in 59⅘ seconds, which was some faster than the Terrehautians had ever witnessed a mile covered before. But that was not all of Ooldfield's feats at Terre Haute that day. Far from it, for did he not defeat the "daredevil Italian," Ollie "Savini," in as close a race as was ever witnessed on circircular track? He did. And was not Terre Haute mightily tickled and did it not sound the praises of the mighty Oldfield? Again, "it did." Whereat the peerless Oldfield did wax exceedingly pleased and did say unto himself: "This is a jay good town, I will return yet again, for this is the land of easy shekels and Mumm's my word."

It must have been great when Oldfield covered a mile in the unheard of time in Terre Haute of 59⅘ seconds. According to the local papers a "large crowd of spectators turned out to see the most wonderful feats ever performed in auto circles—the professionals greeted with round upon round of applause—Barney swung around the track at lightning speed, scarcely pausing in his mad flight around the curves of Death—onlookers watched him with amazement—loudly cheered for his nerve-racking feat. It was most marvellous!"

And then to cap the climax Oldfield defeated Savin in the "most thrillingest" race imaginable. He let him lead until almost the finish then rushed by in one mad dash at the tape, winning out in a gasp. Barney "retained his title of world's champion only after a hard fight." It was wonderful. Even Savin, the "daredevil Italian," drive an exhibition at a mile-a-minute clip. No wonder Terre Haute just sat up in the grandstand and hugged itself in a paroxym of unalloyed joy.

Of course, there were other great races, but they paled into insignificance beside the marvelous feats of Oldfield and his selfnamed "dare-devil Italian." The following summary will suffice to show the results:

Three miles for motorcycles—Won by C. W. Twigg, Yale; second, George Arrowsmith, Curtiss; third, T. R. Casebeer, Yale.

Three miles for Ford runabouts—Won by Virgil Pounds; second, Claude A. Floyd; third, C. Hayes. Time, 4:48⅗.

Two miles against time—By Ollie Savin. Time by miles, 1:03⅘, 2:06⅗.

Two miles against time—By Barney Oldfield. Time, 1:01⅗, 2:01.

Three miles, free-for-all, handicap—Won by Ollie Savin (scratch); second, C. Hayes, Ford; third, Ed. Weiant, Buick; fourth, W. B. Fox, Pope-Toledo.

Two mile championship match between Barney Oldfield and Ollie Savin—Won by Oldfield. Time, 2:23⅗.

Ten mile open—Won by Pounds, Ford; second, Weiant, Buick; third, Hayes, Ford.

Brooklands Track Made Safer.

A remedy, almost primitive in its simplicity, has at length been developed for the protection of drivers using the runover to the finishing stretch at the Brooklands Motordrome in England, making safer that portion of the course upon which, during races, so many accidents have occurred. This consists of nothing more nor less than a broad black line painted on the cement of the track and termed the limit line. It leads in a long sweeping curve around from the stretch to the main course and terminates at the entrance to the paddock. Drivers finishing a race are obliged to keep within its boundaries upon penalty of disqualification, and must not stop their cars until they have crossed a second intersecting boundary called the stopping line. This leaves a strip of the main course always clear in case other cars are still running at the end of a race, besides requiring drivers to have their cars under full control after crossing the finishing line. All drivers must subscribe to the new rules before entering a race. It is hoped in this way to put an end to a long series of mishaps at this point, several of which have been serious in their nature, and one fatal.

Pittsburgers Organize a 6-ty Club.

A press agent in Pittsburg has bestirred himself and formed the Six Cylinder Club, adherents of this type car only being eligible. It is stated that if a member speeds faster than 6-ty miles an hour he has to pay a fine in the form of a banquet to his fellow members, each plate to cost $6 a plate. It is not added what the judge's fine will be if a member is caught for speeding at 60 miles an hour. Naturally the membership will be limited to 6-ty.

Club Organized for Hudson Valley.

The Hudson Valley Automobile Club was organized at a meeting held in oughkeepsie, N. Y., one night last week. The club starts with a membership of fifty, and these officers: President, Dr. J. W. Poucher; first vice-president, Ralph Tompkins; second vice-president, Albert A. Simpson; third vice-president, John Hopkins; secretary, Otis W. Sherman; treasurer, Clinton D. Parkhill.

Sacramento Valley Has New Club.

Thirty-eight motorists have formed the Sacramento Valley Automobile Club, which will have its headquarters in the California city of that name. Officers will be elected at a future meeting.

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PLANS A BENEVOLENT INVASION

Tyler Promises to Make Nantucket Prosper—Peaceably, if He Can; Forcibly, if He Must.

The new ordinance passed by the selectmen of Nantucket closing "particular roads and ways" in that town to the automobile, and thus practically excluding the vehicle from the entire island, threatens several varieties of trouble. At present it is before the State Highway Commission, for the approval of that body. There will be considered in relation to it a protest against approval, which has been signed by a number of permanent residents who side with the automobilists against the anti-automobile element on the island. Already the commission has discountenanced the exclusion policy of the selectmen and the new ordinance appears likely to meet an adverse fate.

Should the ordinance get by the commission, however, Frank J. Tyler, of Boston, is ready to follow up the signal victory he won against the town through the recent decision of Judge Edgar Gray Sherman in the Superior Court. How Mr. Tyler regards the situation, and what he purposes to do is best told in the text of the following letter sent by him to the governing board of the town:

"To the Selectmen of Nantucket:

"On Thursday, October 1, Judge Sherman of the Massachusetts Superior Court rendered a decision upholding my contention that your automobile exclusion order could have no standing in the courts of this commonwealth. To any one older than seven, it must be apparent that Nantucket, being a part of this commonwealth, has no more legal right to deprive a citizen of his rights than has any other section of the State; and that her highways cannot be closed to any legal method of travel.

"Having this in mind, I am greatly amused at the attitude of your board, as reflected in the order which appears in the Inquirer and Mirror of October 5, and which reads as follows: 'Automobiles are hereby excluded from these particular roads and ways in the town of Nantucket, viz.: Broad street, North and South Water streets, Federal street, Center street, Union street, Orange street, Main street and the Milestone road. Selectmen of Nantucket, John M. Winslow, Secretary.'

"Now, any one familiar with the situation knows that this order is in effect an absolute exclusion of automobiles from the island. Your ban covers every avenue of travel from the steamboat wharf, every possible avenue of approach to the State highways, and even the State highway between Nantucket and Siasconset as well.

"Your contention is, judging from this and your former order, that you have the right to dictate the kind of vehicle that shall be used for conveyance over Massachusetts roads. If I happen to land at Nantucket and desire to proceed to Siasconset, you say to me, 'You must engage one of Selectman Pitman's livery teams, or one from some other of the numerous liverymen of the island, all of whom seem to be brothers, cousins, uncles, sons, fathers, or some other close relative of one or more of the selectmen—at an expense of $3 if I take the right hand road, and $3.50 if I take the left.'

"Notwithstanding there are some 200 or more livery horses on the island, apparently all owned by the selectmen, their brothers, fathers, sons, etc., I was not able to find one late in August that the society for the prevention of cruelty to animals would allow driven about the streets of Boston. They were subjects for the fertilizer mills—tired out, worn out—and I consider it a crime to drive them.

"I was told that with one of these overworked animals, by a liberal use of the goad, I might negotiate the distance from Nantucket to Siasconset—about eight miles of as beautiful state highway as one would care to ride over—in an hour and 20 minutes; that I would find a livery stable at the Siasconset end owned by Selectman C. H. Pitman, where I could have the poor overworked beast baited for $1, and then I might allow at least one hour and 15 minutes to drive back. I can see no justification for the cruelty to animals this drive would impose, or for the outlay of $3.50 by one road or $3 by the other. A much more humanitarian means of making the trip would be to jump into my Maxwell touring car and in 20 minutes (with no pangs of remorse for cruelly prodding over the road the poor overworked scarecrow of a horse) at an expense of about 16 cents I am at my destination in Siasconset.

"There are hundreds of people who spend their summers in Siasconset who want this method of transportation, and there are miles of as beautiful seashore as God ever created as barren of houses as the north pole of sunflowers, a large portion of which you would see covered with beautiful summer homes if you would but hold out the glad hand.

"The Maxwell automobile will prove the greatest godsend Nantucket ever had. I intend to give Siasconset people a quick, comfortable and economical method of reaching their homes from the steamboat landing in Nantucket, and if you will join me, we shall make your bleak, unpeopled shores blossom as the rose.

"Selectman Pitman and all other livery men instead of being driven out of the livery business and forced to quarters in 'our island home,' will find profitable use for a much larger number of livery horses than they now employ for short pleasure drives to places of interest, in all parts of the island.

"If you don't care to join my band wagon of prosperity, of course you are privileged to stay off. I want you, however. Come on!

"Just one more word in closing. Your automobile exclusion order has no more legal effect than the prattle of a nursing babe. I shall in a short time drive my Maxwell car over the public highways from Nantucket to Siasconset, and I will prosecute to the fullest extent of the laws of this commonwealth any one who interferes with my rights.

(Signed) "Frank J. Tyler..

"Boston, Oct. 9, 1907."

"Marine" Insurance for Automobiles.

Why "marine" insurance companies should be authorized to insure such vehicles as automobiles under the Massachusetts laws was a question that appeared as a conundrum to the legislative committee which is holding recess sessions to consider questions connected with insurance. Charles E. Barnes, representing several such companies, appeared before that committee in Boston on October 10, and asked for the insertion in the insurance laws of a provision enabling them to insure automobiles against loss by damage through collision and similar causes.

It appears that, under a recent ruling of the state's attorney general, marine companies were permitted to insure automobiles against fire and the request made was with the aim of having the other class of damage underwritten in the same policy. The members of the committee seemed to be unaware of the existing privilege under the attorney general's ruling and a number of questions were fired at Mr. Barnes to elicit information as to why "marine" companies were permitted to insure vehicles which have no connection whatever with the perils of the sea. Mr. Barnes explained that the word "marine" had become obsolete in its literal insurance sense, and that "transportation insurance" would be a more accurate description.

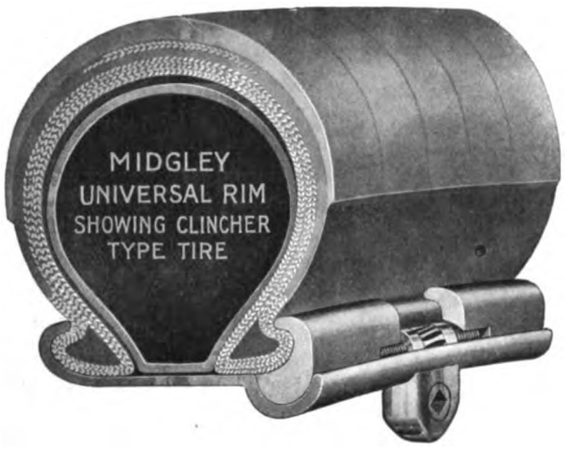
Centenarians Given a "Joy" Ride.

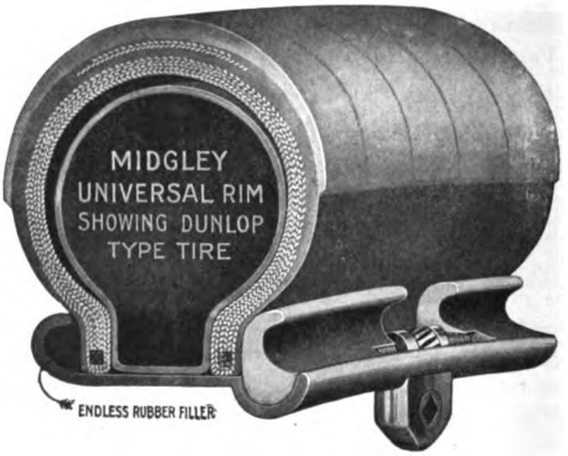
Four thousand years took an automobile ride around New York last Sunday. Several philanthropists thought that old people who have outlived their usefulness should be entitled to an outing as much as orphaned children, so they got several cars and gave seventy residents of the Home of the Daughters of Jacob what to practically all of them, was their first automobile ride. The combined ages of the occupants of one of the large cars amounted to more than 4,000 years. The unusual sight caused pedestrians to stop and cheer or wave greetings at the old folks, which were enthusiastically returned in kind.

"The A B C of Electricity."

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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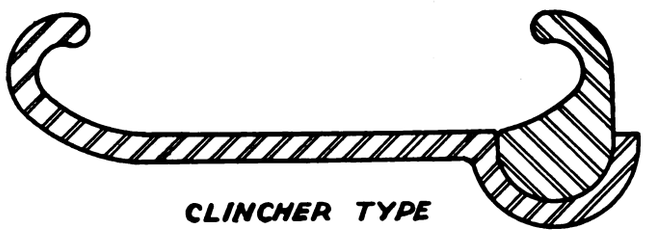
It Has Only Two Parts — **Its Nearest Competitor Has Four or More**

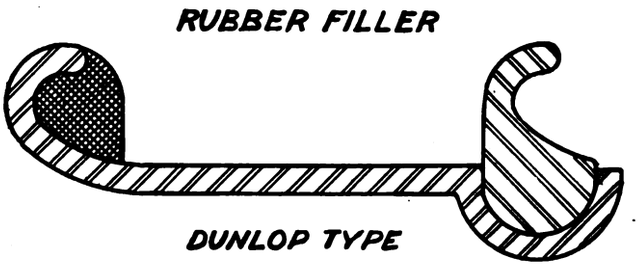
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The Week's Patents.

863,151. Automatic Spark-Advancer. Benn P. Churchill, Milwaukee, Wis., assignor of two-thirds to Retta Pierce Davenport and Everett C. Rockwell, Chicago, Ill. Filed July 28, 1906. Serial No. 328,188.

1. In a gas engine, the combination of a rotating member, a switch connected with the sparking mechanism of the engine, a governor weight movable with reference to the rotating member, a link connected to said governor, extending along one side of the center of the rotating member, a contact mounted on the link adapted to engage the switch, means for so guiding said link that as the governor weight moves it moves said contact on the link about the center of the rotating member for the purposes set forth.

863,206. Resilient Wheel for Motor Cars and Other Road Vehicles. Tom Oldfield and Joseph A. Schofield, Halifax, England. Filed July 27, 1906. Serial No. 328,068.

1. In a wheel, the combination, with an outer rim, and an inner or hub portion; of sleeves pivoted to the said inner portion, normally radial bars having their middle portions slidable in the said sleeves and their outer ends pivotally connected with the said rim, abutments secured on the end portions of the said bars, and helical springs arranged between the ends of the said sleeves and the said abutments.

863,266. Speed Indicator. Isaac P. Davis, Springfield, Mass. Filed Nov. 2, 1906. Serial No. 341,765.

1. In a speed indicator, the combination of a rotary non-reciprocating governor shaft, a ball governor consisting in part of a rotary sliding member on said shaft, a rotary member at one side of said governor shaft having a peripheral spiral, a pointer in operative connection with said spiral member, and connecting means between the rotary sliding member of the governor and the spiral member whereby the spiral member is caused to revolve by reason of the rising and falling movement imparted to said sliding member on the governor shaft.

863,317. Transmission Gear. Julius H. Richards, Torrington, Conn. Filed March 21, 1907. Serial No. 363,704.

1. In an automobile transmission mechanism, the combination with a fly wheel of a plurality of sets of planetary gears of different diameters held to the fly wheel, a transmission shaft rotatably held in the fly wheel, a plurality of gears held to rotate with the transmission shaft as an axis and meshing with the planetary gears, means for locking certain of the gears to the transmission shaft, together with means for imparting a rotary movement to the sets of gears on their own axis as they move with the fly wheel.

863,337. Fluid Cooler. Allie R. Welch and Fred S. Welch, Pontiac, Mich. Filed June 5, 1905. Serial No. 263,724.

1. In a cooler consisting of a plurality of tubes for the passage of a cooling medium and having circulating passages therebetween and an inclosing frame, a hollow casting forming a part of said frame having its hollow communicating with said passages, a pump chamber forming part of said said casting and having a passage communicating with said hollow through which passage the pump is adapted to cause a fluid to flow.

863,341. Transmission Mechanism. Erhard T. Alber, Ann Arbor, Mich. Filed Dec. 20, 1906. Serial No. 348,695.

1. In a frictional transmission mechanism, the combination of the driving and driven shafts in parallel relation, a friction cone upon each of said shafts, said cones being so disposed that the base of one cone stands opposite the apex of the other cone, an eccentrically journaled shaft adjacent to said cones and so positioned as to lie parallel with the opposed faces thereof, the axis of said shaft being inclined with respect to the axes of said parallel shafts, a friction roller mounted upon said shaft to rotate thereon and to slide longitudinally, means for sliding said roller longitudinally of said shaft, and means for rocking the shaft to carry said roller toward and from said cones.

863,342. Muffler. Erhard T. Alber, Ann Arbor, Mich. Filed Dec. 20, 1906. Serial No. 348,697.

1. In a muffler, the combination of the non-perforated casing, a central cylinder therein disposed to form an annular space between it and the wall of the casing, the wall of the cylinder at its forward end being provided with perforations which communicate with said annular space, a movable piston within the cylinder, an induct pipe communicating with the forward end of said cylinder, and an educt pipe communicating with said annular space through the rear end of said casing.

863,348. Construction of Automobile Vehicles. Marcus Birkigt, Barcelona, Spain. Filed June 23, 1905. Serial No. 266,647.

1. In an automobile vehicle the combination of a frame, comprising flanged metal side members, a motor crank casing and a gear box, portions integral with the flanges of said side members extended to and bolted to said crank casing and gear box respectively, and brackets extending to and carried directly by said side members and supporting the weight of said casing and gear box irrespective of the said portions of the side members, substantially as described.

863,353. Tire Tool. William C. Broadwell, Rochester, N. Y. Filed Nov. 21, 1906. Serial No. 344,391.

1. In a device of the character described; an arm adapted to be inserted between the tire and the rim of the wheel and to react on the rim and a support adapted to hold such arm at an operative angle with the plane of the wheel with one end engaging between the rim and the tire and the other extending in a dirction oblique to the axis of the wheel and effectually in a plane radial thereto.

863,369. Sparking Device for Explosive Engines. Joseph S. Elverson, Catasauqua, Pa. Filed Feb. 6, 1907. Serial No. 355,978.

1. In a sparking device, an engine having an explosion chamber therein, electrodes having terminals extending into said chamber, non-conducting means having an opening interposed between said terminals and means for actuating said non-conducting means so as to permit the opening thereof to be brought opposite the terminals of said electrodes, said non-conducting means adapted to normally prevent passage of sparks between the same until the openings have been brought opposite said terminals.

863,388. Lamp. William S. Hamm, Lakeside, Ill., assignor to The Adams & Westlake Company, a Corporation of Illinois. Filed May 12, 1905. Serial No. 260,191.

1. In a lamp of the kind described, in combination, a chambered body provided with an upper annular air chamber, such annular chamber having annularly arranged induction ports and being in communication with the body chamber; and annularly arranged radially disposed perforate partitions in the air chamber.

863,451. Vehicle Wheel. Thomas Rowland, Coraopolis, Pa. Filed April 9, 1906. Serial No. 310,620.

1. In a wheel, the combination with a hub, and a tire, of a plurality of elliptical springs supported between said hubs and said tire, and having their major axes radiating from said hub, each spring consisting of a strip of metal wrapped a number of times upon itself, washers interposed between said wrappings, substantially as described.

1907 SEAL MADE IN NEW HAVEN CONN.

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A Winner in all Prominent Events Last Season.

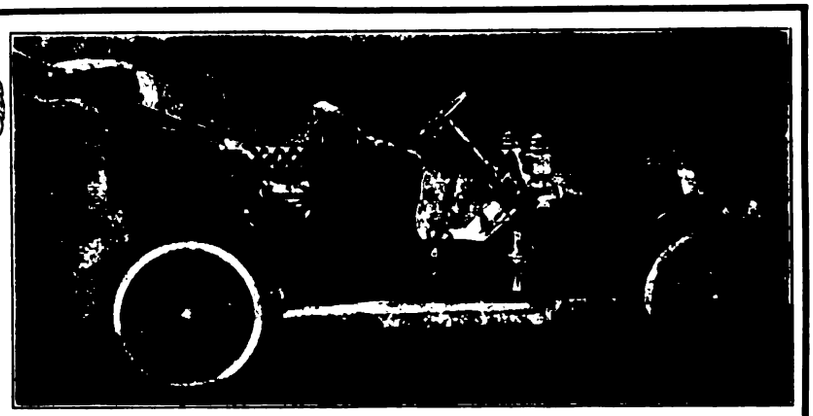
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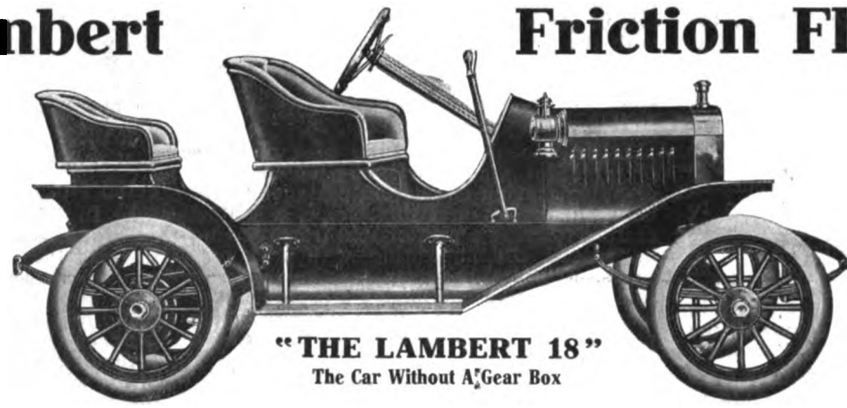


Model C, 35-40 H. P. 6-Passenger, $3,000.

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The Lambert Friction Flyer 1908

$800 **$800**



"THE LAMBERT 18"
The Car Without A Gear Box

SPECIFICATIONS.

CAPACITY—Three passengers. WHEEL BASE—95 inches. TREAD—56 inches. FRAME—Pressed steed. WHEELS—30-inch, wood artillery. TIRES—30x3 inch Michelin. MOTOR—2-cylinder opposed, 18 h. p. TRANSMISSION—Friction. SPEED—1 to 35 miles an hour. CARBURETOR—Float feed. IGNITION—Jump spark. RADIATOR—Honeycomb. DRIVE—Single chain to rear axle, encased. BRAKE—External on each rear hub. BEARINGS—Hyatt Roller and Standard Ball. CLEARANCE—12 inches. GASOLINE CAPACITY—12 gallons. LENGTH OF BODY, from inside of dash—76 inches. WIDTH OF BODY, to ouside mud guard—63 inches. WIDTH OF BODY—32 inches. WIDTH OF FRONT SEAT—36 inches inside of cushion. WIDTH OF REAR SEAT—18 inches inside of cushion. HEIGHT OF FLOOR FROM GROUND—29 inches PAINTING—French gray. UPHOLSTERING—Fine quality of leather; springs in cushions and backs of seats. WEIGHT—1,350 pounds. EQUIPMENT—Two oil lamps, horn and full tool equipment. PRICE—$800 complete, f. o. b. factory.

$800 "THE LAMBERT 18" $800

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Ask the best posted mechanic of your acquaintance what he thinks of the Friction Drive, and the answer will be: "The Best on Earth." Ask a farmer and he will not know, because his calling has not required that he keep abreast with the improvements in power transmission—especially as applied to automobiles.

Better still, see the Lambert, have a demonstration—examine the mass of testimony that has come to use unsolicited—we fell sure that the verdict will be: "I will buy a Lambert because it is the simplest, nobbiest and best car on the market for the money." Write for catalogue.

See the Lambert in Section "D" main floor, Grand Central Palace, New York City, Oct. 24-31.

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Other things being equal, you certainly prefer a car, which

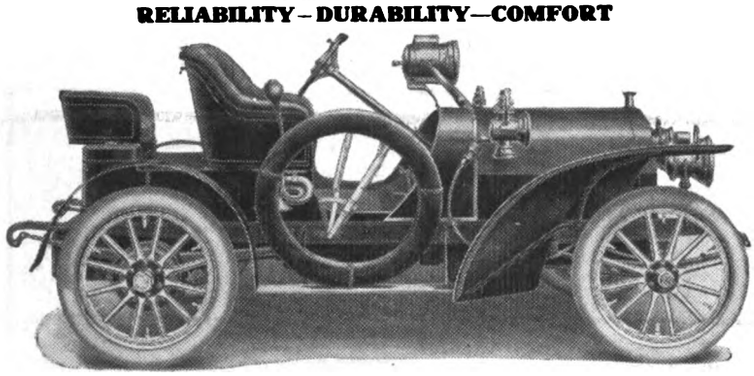
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THE TRIUMPH Car is built in two styles: **Model A—30 H. P., 4 Cylinder Runabout, - $2000.00** **Model C—30 H. P., 4-Cylinder Touring Car, $3000.00**

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through six inches of mud for thirteen consecutive hours during the recent 24 hour race at Philadelphia a Lozier car won, equipped with the

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The batteries occupied an exposed position in the rear of the chassis and from two to ten pounds of mud were scraped from them every time the car came off the track for water and gasolene. These same batteries ran the car to New York.

If you want the best Ignition System—specify Witherbee Batteries for your 1908 Car.

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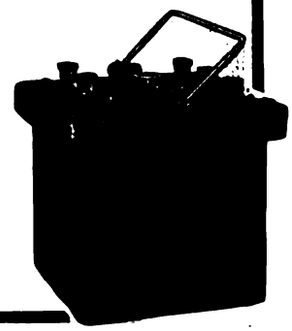
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It was found that

3 Out of Every 4 Tourists
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Warner Auto-Meters

Yes, sir; of the 48 cars that finished at New York in this year's Glidden Tour, exactly 36 carried **Warner Auto-Meters.** Just think of that! **Three times** as many **Auto-Meters** were used by these **experienced motorists** as there were of **all other** speed-and-distance indicators **combined!**

This **sweeping victory** for Warner Auto-Meters, followed **last** year's **equally** creditable performance in the Glidden Tour, and the recent notable triumphs in the **Chicago Sealed Bonnet Contest** and the **Boston Endurance Race,** establish beyond the possibility of a doubt that the Warner Auto-Meter is the **only** speed-and-distance indicator that can be **depended** upon to do the work right at all times and under all conditions.

Accurate as a Watch—Reliable as a Compass

Warner Auto-Meters are made on the **proven-successful** magnetic principle. They're just as **reliable** and **durable** as a **mariner's compass.** No matter how **rough** the road, you can tell **at a glance exactly how fast** you are going. The arrow **never** flutters or bobs back and forth. The Warner Auto-Meter is as **accurate** as a watch.

You ought to have an Auto-Meter on your machine—it **doubles** the pleasure of autoing, helps you to **control** your machine and **frequently** saves embarrassing situations in the **police court.**

You'll notice the handsome little Auto-Meter on **most** of the best cars. Take a **look** at it; inquire about it—nearly **all** automobile dealers sell **Auto-Meters.**

Write us the name and power of your car, and we'll tell you just what it will cost you to put an Auto-Meter on the dashboard.

THE WARNER INSTRUMENT CO., 767 **Roosevelt St., Beloit, Wis.**
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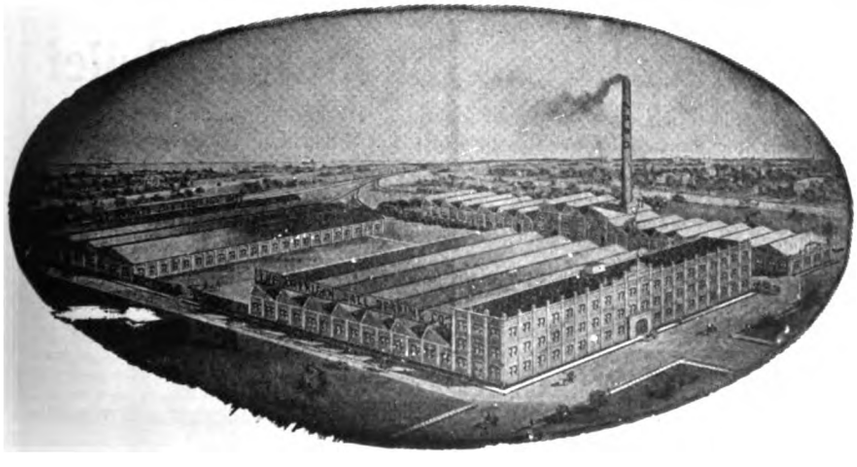
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¶ Because they embody the only correct principle of gas generation (wick feed) making flooding impossible. ¶ Are made round so as to enable each part to be drawn from one piece of heavy sheet brass (not four pieces soldered together). ¶ This absolutely removes the possibility of leakage and produces a steady supply of never failing gas.

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Will be made during the next two weeks.
It will be of absorbing interest.

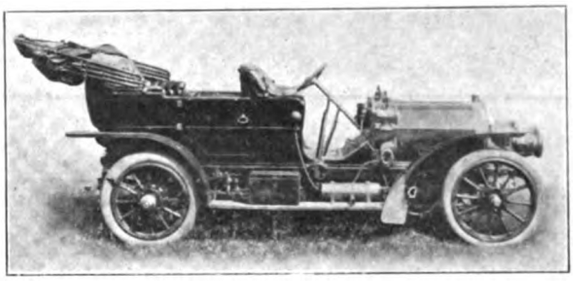
ELECTRIC VEHICLE COMPANY, Hartford, Conn.

Member A. L. A. M.

PENNSYLVANIA

TYPE C

Pennsylvania 50

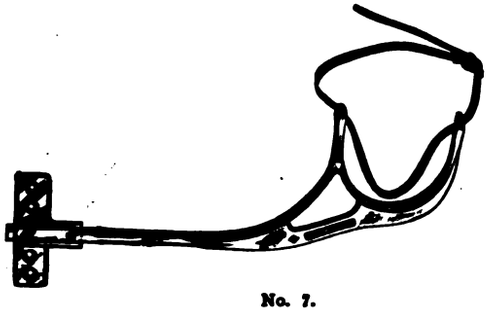


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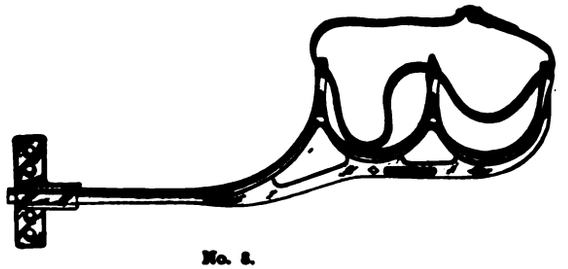
MILLER TIRE BRACKETS FOR CARRYING EXTRA TIRES IN THE CAR WHEN TOURING



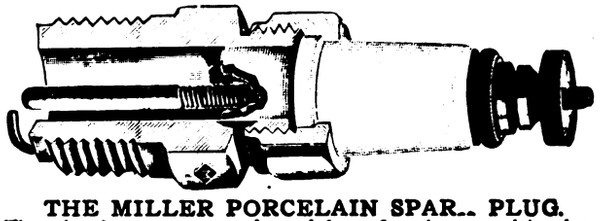
No. 7.

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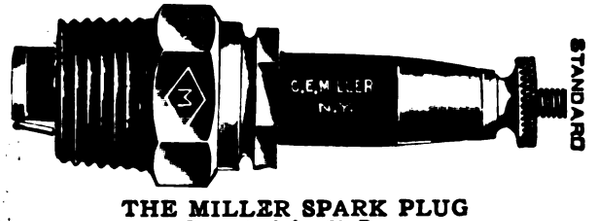


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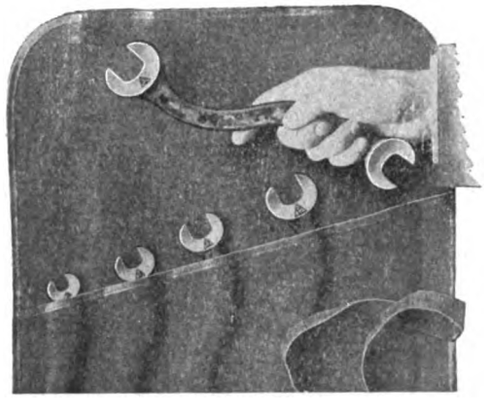
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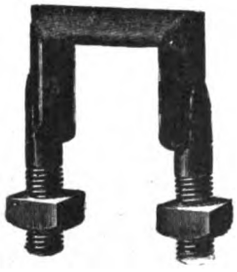
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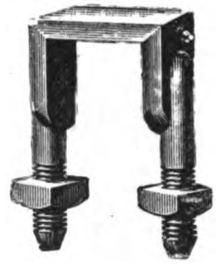
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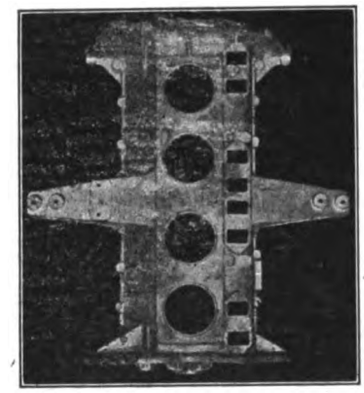
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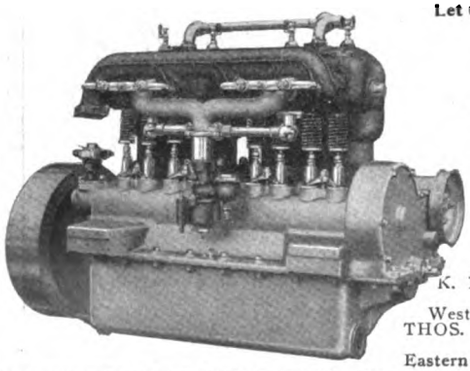
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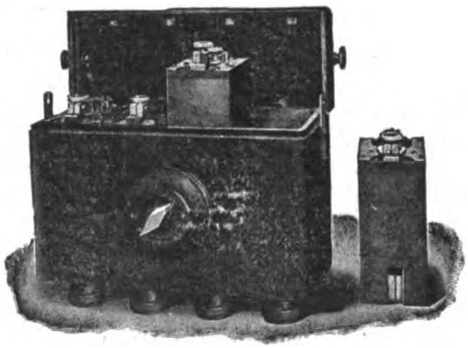
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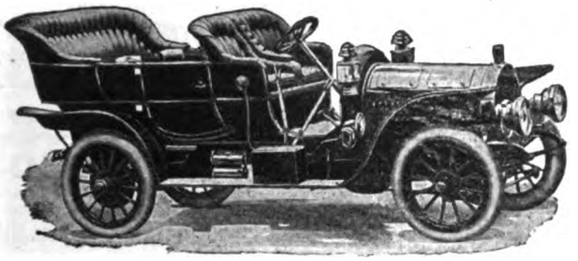
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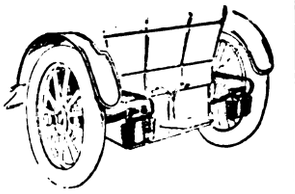


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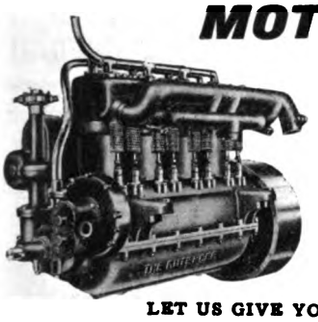
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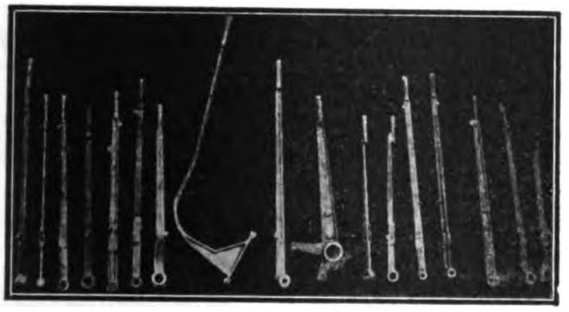


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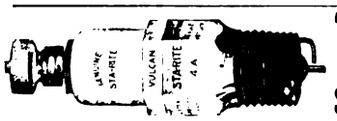
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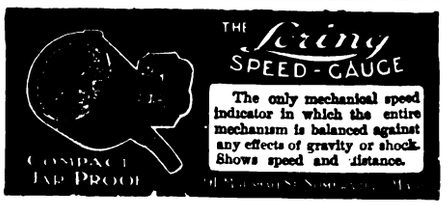


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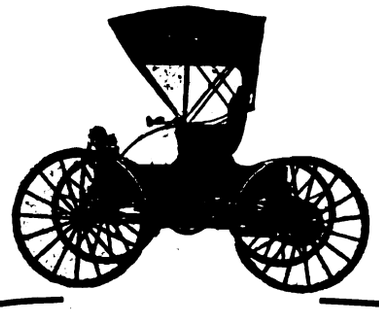
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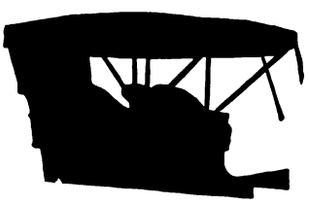
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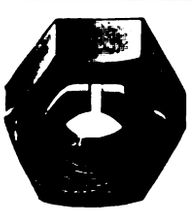
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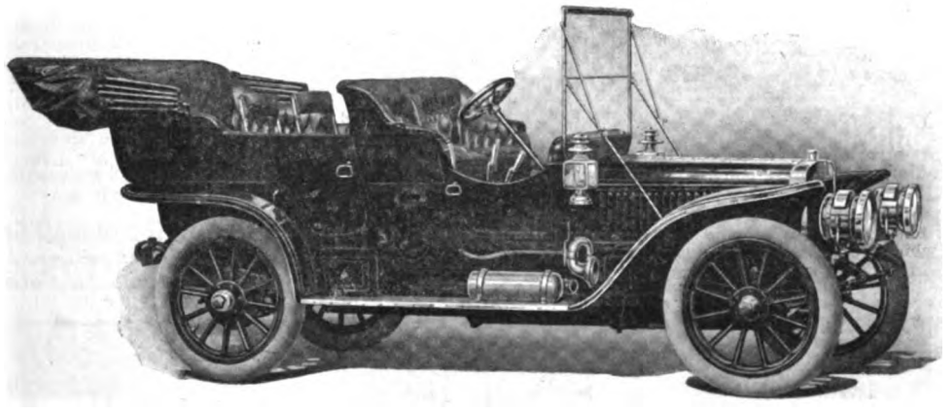
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For Ten Good Chaffeurs

First Award $1,000
Second Award $500
Third Award $250
Fourth Award $150
Six Others $100

A plan to benefit owners as well as drivers. Ask us about it.

Six quiet, powerful cylinders, producing power three times in every crank-shaft revolution, exerting constant tension on the driving mechanism—eliminating vibration, jar, shock, noise and the jerk and the wear of four-cylinder motors—using only minimum power for ordinary work and reserving tremendous power for bursts of speed and triumphant hill-climbing, minimizing expense of operation and upkeep, giving its owner a joy and pride heretofore unrealized—the most superb car possible to imagine—this is the Winton Six-Teen-Six.

The exclusive car of 1908—entire output limited to 500 cars. Purchase price includes five-bow top, five lamps, gas tank or generator, horn, tools and glass front.



THE WINTON MOTOR CARRIAGE COMPANY

CLEVELAND, OHIO, U. S. A.

Member A. L. A. M.

NEW YORK	PHILADELPHIA	CHICAGO	SEATTLE
BOSTON	PITTSBURG	DETROIT	SAN FRANCISCO

At the Madison Square Garden Show, New York, November 2-9.

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When you pay $3000 to $5000 for an Automobile, Mr. Business Man, you get a pretty *good car*—but you don't get your *money's worth*

You don't because today most automobile *values* bear the same relation to automobile *prices* that *bicycle* values and prices bore to each other *twelve years* ago.

You paid $125.00 for a good wheel *then*. Today you can buy a *better* one for 60 per cent *less*.

Before you pay $3000.00 to $5000.00 for an *automobile*, find out what sort of a car the *Mitchell* is at *$2000*.

Don't take it for granted that $2000 *can't* buy as good automobile value.

Prove that it *can;* it isn't a bit of trouble. Put *higher* prices on the *defensive*. Do it this way—

Try the Mitchell—any agent anywhere will be *glad* to "show you" a combination of style, finish, construction and performance in the Mitchell new models, the superior of which hasn't been "shown" in any car made today regardless of price.

See the Mitchell at the show—scrutinize it most critically—leave your business card and address and state the most convenient time to call for you.

Then we'll send a car around and show you a *silent argument* that will instantly appeal to your business judgment and *convince* you—a silent argument the equal of which no *salesman* ever will be capable.

The Mitchell will *prove* value equal to that of any car. The Mitchell will *decide* the question of automobile prices and value once and for all time.

Isn't saving $1000 or $3000 on an automobile which *proves* itself right *worth considering*, Mr. Business Man?

If you saw a chance to save $3000 for your business, wouldn't you go to at least $500 worth of trouble to do it?

To save $3000 on your automobile, which is worth $3000 to you *personally*, is no trouble *at all* and doesn't cost *anything*.

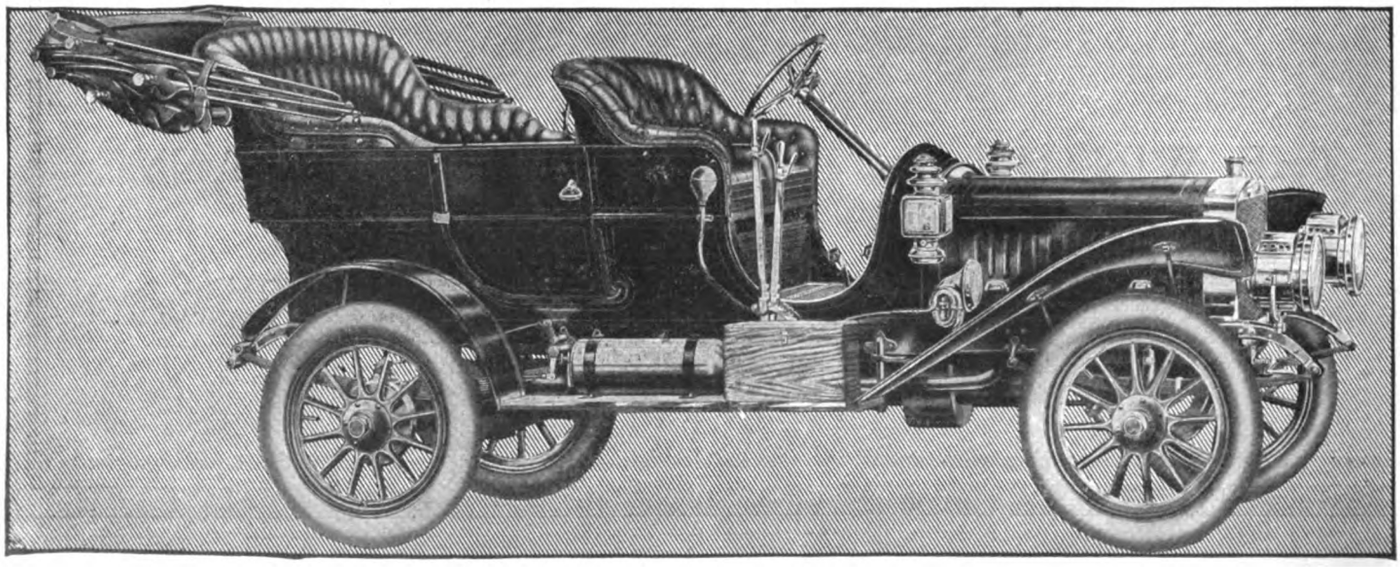
You simply telephone any Mitchell agent that you are interested (no obligation on your part) and want a demonstration.

Think it over, Mr. Business Man. Do you know a single good, business-like reason *why* you should pay more than $2000 for an automobile? Prove that there *isn't* any by writing us or the nearest agent for names of many satisfied users of the Mitchell who have driven their cars thousands of miles over all kinds of roads and hills, and have encountered every known road test that makes or breaks a car. Let them tell you facts in their *every-day* experience which proves the Mitchell to be the most economical car to *keep* as *well* as to buy.

Mitchell Motor Car Co., 275 Mitchell St., Racine, Wis.

Member American Motor Car Manufacturers' Association

If not going to the show, write for Catalog No. 18



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The new Model "K" and Model "L"

WHITE STEAM CARS

will be exhibited at

the Automobile Show in

MADISON SQUARE GARDEN

November 2-9

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Locomobile

1908

PROVED RELIABILITY
ABSOLUTE SAFETY
MAXIMUM DURABILITY
$2900 up

Locomobile Dealers

ALBANY, Taylor Automobile Co.
AMSTERDAM, N. Y., Wm. Daye.
BALTIMORE, MD., Callahan, Atkinson & Co.
BIRMINGHAM, ALA., W. T. Harrison Co.
BRISTOL, CONN., J. B. Sessions.
BROCKTON, MASS., W. H. Marble.
BROOKLYN, N. Y., The I. S. Remson Mfg. Company.
CHARLES CITY, IA., B. A. Stevens.
CINCINNATI, O., Hanauer Auto Co.
DAVENPORT, IA., Buck Auto & Implement Co.
DECATUR, ILL., Geo. W. Ehrhart.
DENVER COLO., The Chicago Auto Co.
DES MOINES, IA., Iowa Auto & Supply Co.
ELKHART, IND., G. B. Pratt.
ESSEX, CONN., O. N. Beebe.
FALL RIVER, MASS., Sterling Mfg. Co.
GREENWICH, CONN., Allen, Asten & Co.
GRAND RAPIDS, MICH., Dudley E. Waters.
HAVANA, CUBA, German Lopez.
HOUSTON, TEX., Mosehart & Keller Auto Co.
KANSAS CITY, MO., The Bonney Motor Car Co.
LOS ANGELES, CAL., Success Auto Co.
MARLBORO, MASS., Frank Billings.
MIDDLETOWN, CONN., T. M. Russell.
MILWAUKEE, WIS., Schreiber Motor Car Co.
MEXICO CITY, Compania Vehiculos Electricos.
MINNEAPOLIS, MINN., Jordan Auto Co.
NEW BEDFORD, MASS., S. C. Lowe Supply Co.
NORWALK, CONN., F. E. Lockwood & Co.
NEW HAVEN, CONN., Auto & Supply Corporation.
NEWARK, N. J., Greene Motor Car Co.
NEW ORLEANS, Automobile Company.
PROVIDENCE, R. I., Davis Auto Co.
PITTSBURG, PA., Fort Pitt Auto Co.
PONCE, PORTO RICO, Robert Graham.
PORTLAND, ORE., Covey & Wallace Motor Co.
READING, PA., Penn Auto Co.
ROCHESTER, N. Y., U. S. Auto Co.
SAGINAW, MICH., Norris Auto Co.
SPRINGFIELD, MASS., Springfield Auto Co.
ST. LOUIS, MO., Capen Motor Car Co.
SAN FRANCISCO, CAL., F. G. Miner.
TAUNTON, MASS., Carlow Auto Co.
WILKESBARRE, PA., Wyoming Valley Motor Car Co.
WASHINGTON, D. C., Luttrell Co.
WATERBURY, CONN., E. H. Towle Co.
WICHITA, KAS., A. S. Parks.
YONKERS, Yonkers Auto Station.

Applications for open territory may be sent to factory or to the nearest Branch Office

The Locomobile Company of America, Bridgeport, Connecticut

BRANCH OFFICES

NEW YORK, Broadway and 76th St.
PHILADELPHIA, 245 No. Broad St.
BOSTON, 400 Newbury St.
CHICAGO, 1354 Michigan Ave.

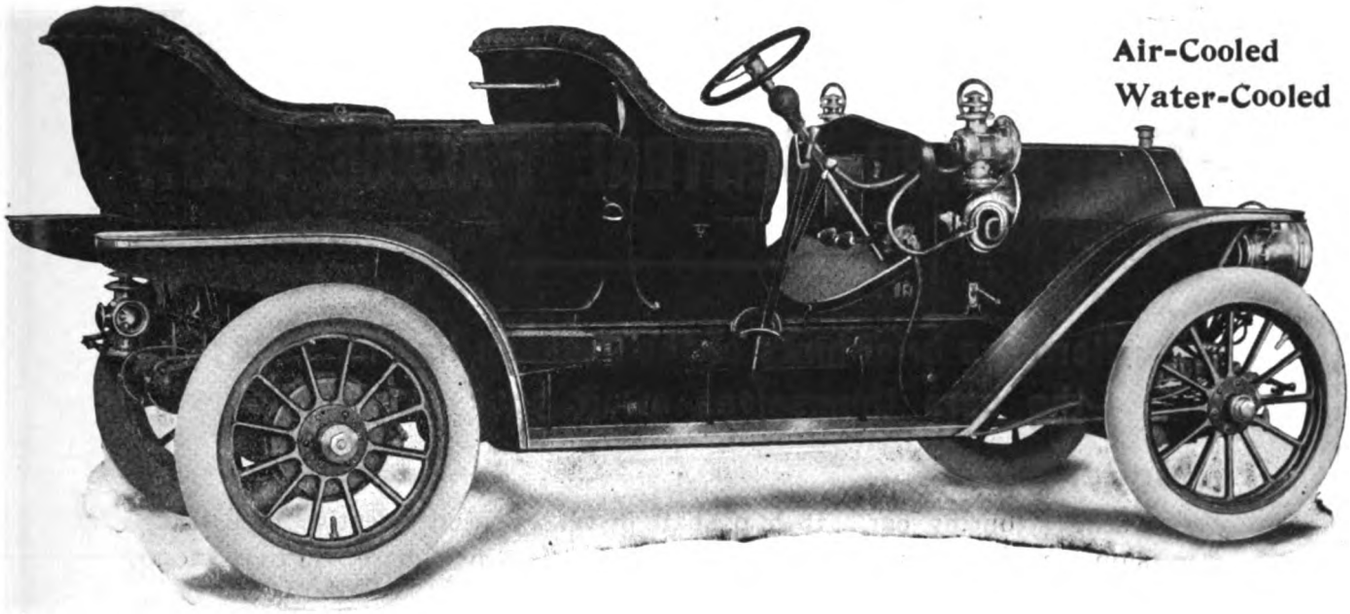
Members Association of Licensed Automobile Manufacturers.

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THE MARMON

"A Mechanical Masterpiece"

The Easiest Riding Car in the World



Do These Points Interest You?

¶ Do you want the easiest riding car in the world without any exception; a car that will go over rough roads with comfort to the occupants and without straining the mechanism of the car? If so, look into the Marmon Double Three-Point Suspension.

¶ Do you want a car in which a woman can tour without fear of exhaustion and without injury to her health? The Marmon is the only car that fully satisfies this requirement.

¶ Do you want an unfailing oiling system that needs no watching, no adjusting? The Marmon has it.

¶ Do you want a clutch that defies wear and starts the car without a jerk? See the Marmon Multiple Disc Clutch with Cork Inserts.

¶ Do you want a strong, dependable steering gear so easy that it can be operated with one finger? Examine the Marmon Roller Bearing Steering Column.

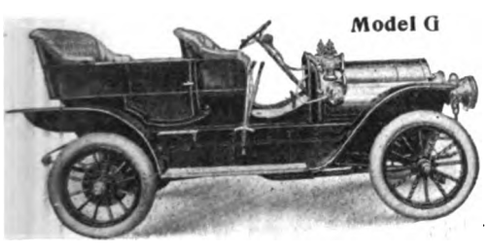
¶ Do you want, all through your car, just such provisions for railroad reliability with mental, physical and financial comfort? Get acquainted with the Marmon Motors (air-cooled and water-cooled), Marmon Perfected Cast Aluminum Body, Marmon Selective Transmission, and other distinctive Marmon features.

¶ This mechanical superiority is your clear gain in buying a Marmon, for you will buy at the same time all the beauty of appearance, all the quality, and all the advantage of reputation to be found in any other car at any price.

¶ In short, do you want the most actual value for your money?

¶ A study of Marmon construction and a ride in the car itself will prove the above points and should precede the purchase of any automobile.

¶ Model H, Touring Car, 40-45 H. P..... $3,500
Model H, Roadster, 40-45 H. P..... 3,500
Model G, Touring Car, 35-40 H. P..... 3,000


Model G

A full description of the 1908 Models will be sent on request of Dept. 16.

Nordyke & Marmon Co.

(Estab. 1851) Indianapolis, Ind.


Model H

New York City, Theo. E. Schulz, 1843 Broadway.
Chicago, Ill., Maxwell-Briscoe-Chase Co., 1407 Michigan Ave.
Boston, Mass., F. E. Wing Motor Car Co., 12 Columbus Ave.
Philadelphia, Pa., Brazier Auto Works, 38th and Market Sts.

Represented by

Baltimore, Md., Snodeal Automobile Co., 2552 Madison Ave.
East Orange, N. J., Rickey Machine Co., 92 Eaton Place.
St. Louis, Mo., Van Automobile Co., 706 Washington Ave.

Pittsburg, Pa., Pennsylvania Auto Co., Hay St. & Kelly Ave., Wilkinsburg.
Binghamton, N.Y., Heller-Spawn Motor Car Co.
Waterloo, N. Y., Waterloo Automobile Co.
Los Angeles, Cal., C. S. Anthony, 440 W. 33d St.
Milwaukee, Wis., John Ure, Jr., & Co., 172

GRAND CENTRAL PALACE, NEW York.
COLISEUM SHOW, CHICAGO.

AGENTS: 1908 Territory Now Being Placed.

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JACKSON

AT

THE GRAND CENTRAL PALACE SHOW

Here are brief hints of the Jackson line for 1908; —the cars themselves await your examination.

Model E

5-passenger touring car. 35 h. p. shaft drive. 3 speed selective type transmission. 34 inch wheels. 3½ inch tires. 111 wheel base. Price $2000.

Model D

2-cylinder opposed under hood. 24 h. p. shaft drive. 3 speed selective type transmission. 32 inch wheels. 3½ inch tires. 106 inch wheel base. Price $1550.

Model F Jackson Runabout

2-cylinder opposed under hood. Shaft drive. 2 speed planetary transmission. 30 inch wheels. 3 inch tires. 85 inch wheel base. Price $850. 14 h. p.

Model C

2-cylinder opposed under body. chain drive. 2 speed planetary transmission. 30 inch wheels. 3½ inch tires. 96 inch wheel base. Price $1250. 24 h. p.

Gentleman's Roadster

3-passenger. 35 h. p. Shaft drive. 3 speed selective type transmission. 34 inch wheels. 3½ inch tires. Speed 60 miles. Price $2000.

JACKSON AUTOMOBILE COMPANY

JACKSON, MICH.

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1908 1908

THOMAS

Thomas 4-20 Town Cars

Runabouts, Broughams, Cabriolets, Limousines, Landaulets and Doctor's Cars

$2500 to $3250 F. O. B. Buffalo

Reliability **Comfort**

Thomas 4-40 Detroit

Runabouts, Tourabouts, Touring Cars and Limousines

$2750 to $3750 F. O. B. Detroit

Thomas 4-60 Flyer

Runabouts, Tourabouts, Touring Cars, Limousines and Landaulets

$4500 to $5700 F. O. B. Buffalo

Reserve Strength **Reserve Power**

Thomas 6-70 Special

Runabouts, Touring Cars, Limousines and Landaulets

$6000 to $7200 F. O. B. Buffalo

CATALOGUE AND SPECIFICATIONS ON REQUEST

E. R. THOMAS MOTOR COMPANY

BUFFALO, N. Y.

Member A. L. A. M.

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Brush 2-Cylinder Announcement



Price $750.00 Speed 50 Miles per hour

Tool Box and Rumble Seat $50.00 extra. Detachable Surrey Rear Seat $100.00 extra.

This 1908 addition to our line has been called a "Dream on Wheels," because of the wonderful smoothness and sweetness of its 2-cylinder vertical BALANCED motor, theoretically and practically the superior of a 4-cylinder.

The removable seat idea gives a 2-, 3- or 4-passenger car in five minutes time.

And the 1-Cylinder $500.00 Runabout—

the greatest seller of the times. Has exceeded all expectations.

The $600.00 PACKAGE CART is just out.

The $800.00 2-cylinder delivery wagon will appear soon.

IS THIS LINE WORTH HANDLING?

SEE US AT THE SHOWS—

New York, October 24-31 Chicago, November 30, to December 7

BRUSH RUNABOUT COMPANY, DETROIT

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NEW YORK HERALD, TUESDAY, OCTOBER 8, 1907.—TWEN

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Foreign Industry Is Facing a Crisis

Fewer Purchasers of Automobiles In European Capitals Than Makers Had Prepared For.

SMALLER CARS WILL RESULT

Lighter and More Economical Machines Likely To Be the Solution of the Problem.

[SPECIAL CABLE TO THE HERALD.]
HERALD BUREAU,
No. 49 AVENUE DE L'OPERA,
PARIS, Monday.

Is there or not a crisis in the automobile industry? A stranger entering the automobile trade circles of any of the large European capitals at present might almost be forced to conclude in the affirmative.

On all hands in France, Italy and Germany there is talk behind the scenes that a stranger might very well come away with an alarmed view of the situation. Very few writers have cared to deal with the question, pressing though it is thought to be.

Newspapers have maintained stubborn silence, with what object it is difficult to tell. The ostrich policy has been adopted in most cases, confirming the suspicion that things are not going well.

Several serious reasons for the situation are advanced by those engaged in the business and the more important of these are overproduction and the cost of upkeep.

That there is a serious overproduction of large automobiles is proved by the fact that all the dealers and makers, with a few notable exceptions for which there are special reasons, find themselves embarrassed with large stocks of "chasses" either fitted with coach work or in an unfitted state.

The cost of the upkeep of powerful automobiles is perhaps just as responsible for the present stagnation as overproduction. Even the richest quail at bills, which the upkeep of a powerful automobile constantly in use inevitably brings.

People are learning slowly that speed costs money, especially speed with weight. This to some extent explains the present situation, and dismal predictions as to the future are hardly justified.

Out of the present crisis there will come a more perfect motor, a smaller automobile, economical, but still speedy and all that reasonable people can desire. There are plenty of indications that this will be the case.

Makers who are not totally blind to the fact that opinions are changing among purchasers are studying the economical machine of small power capable of doing all that ordinary people require.

Chemists are experimenting with fresh fuels; tire makers are looking for fresh materials or processes of fabrication.

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The Herald's correspondent is right. There *is* a crisis in the automobile industry; both abroad and in the United States. The main cause is the unscientific and extravagant upkeep of the average powerful and heavy motor-car. And its day is past. The crisis is all to the advantage of the Franklin, the sensible and economical automobile. That is why we are 102 per cent. ahead of last year on actual, specified deliveries of the strong scientific high-power and light weight.

Franklin

The 1908 models are now on sale by dealers

16 h. p. Runabout, $1750
16 h. p. Touring-car, $1850
28 h. p. Touring-car or Runabout, $2850
42 h. p. Touring-car or Runabout, $4000
Prices f. o. b. Syracuse

H. H. FRANKLIN MFG. COMPANY, Syracuse, N. Y.

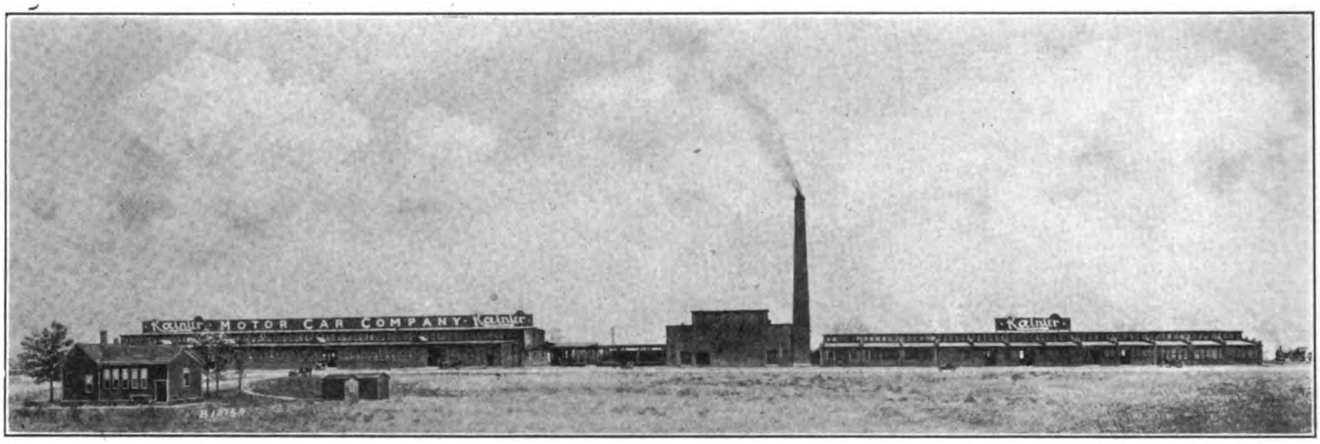
Member Association Licensed Automobile Manufacturers.

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Rainier

"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



OUR NEW PLANT, FROM WHICH IS COMING THE 1908 "MODEL D," TO ADD TO RAINIER FAME.

SOUND business economy demands that in selling a car under our original and distinctive guarantee, "Free of repairs for one year," that the chief expenditure must be at the beginning, that is, at the factory and, in material and construction, instead of in the local repair shops: Therefore our new factory at Saginaw, Mich.

The new plant comprises sixty acres of ground, with spacious brick buildings, in which every piece of machinery is new and specially designed for building the RAINIER. Nothing has been omitted that would tend to insure accuracy and superlative quality. James G. Heaslet, the original designer of RAINIER cars, is responsible for the 1908 RAINIER, which is higher-powered and more strikingly than ever a "Pullman" in quality and finish. "Quality, not quantity," is our factory watchword, and the 1908 output has been limited to 300 cars.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

CHICAGO BRANCH—1725 Michigan Ave.
BOSTON—Morrison & Price Co., 169 Huntington Ave.
NEWARK—Coburn & Belden, 577 Central Ave.
PITTSBURG—B. F. Benson & Co., 559 Seventh Ave.

ROCHESTER—Thos. J. Northway, 92 Exchange St.
MEXICO—H. J. Braschi, Mexico City.
CINCINNATI—Auto Motor Car Co., 804 Sycamore St.
LOS ANGELES, CAL.—Smith Bros.
CUBA—C. J. Fiels, Havana.

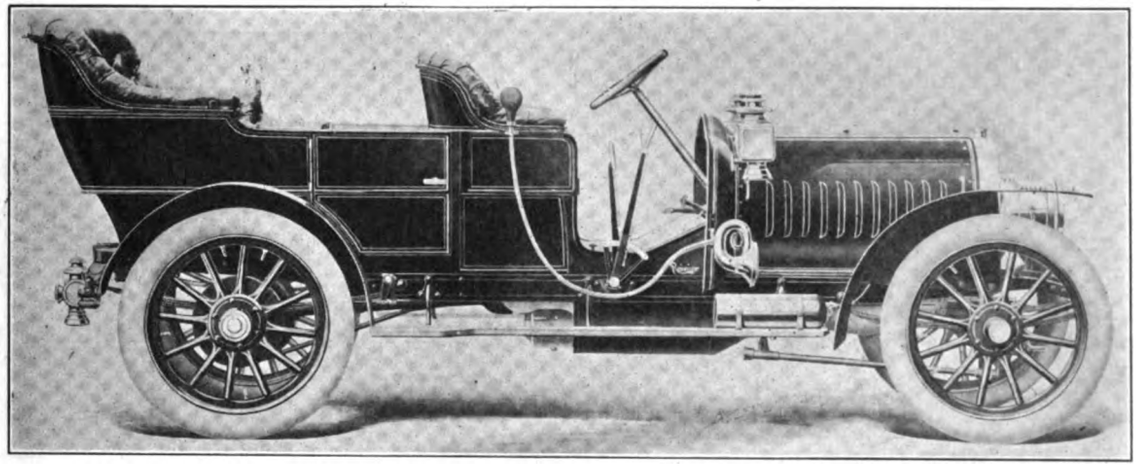
Grand Central Palace Show, October 24th to 31st

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Rainier

"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



1908 "Model D," 45-50 H. P.

SPECIFICATIONS

ENGINE—Rated H. P., 45-50; four cylinders, vertical, cast in pairs; 5-inch bore, by 5¼-inch stroke; cylinders hard gray iron castings, accurately ground to size; pistons light but rigid, ground to fit; valves on opposite sides, mechanically operated, all interchangeable; cams forged integral with shafts; crank shaft nickel steel forging, with bearing surface ground; main engine bearings and connecting rod bearings of finest babbitt metal, enclosed in bronze cases, a construction the same as that in the highest priced imported cars.

IGNITION—Make-and-break system, with Simms-Bosch, low tension magneto, but with a greatly improved and simplified mechanical sparking device, insuring accurate timing and minimum need for adjustment; one upright ignition shaft in place of four.

LUBRICATION—Positive feed mechanical oiler, driven by gear from the cam shaft, provides for engine bearings, magneto and pump shaft; Cylinders and pistons fed by splash system.

CARBURETER—Improved automatic type, having auxiliary air control on dash; feed by gravity flow through trap and screen; Capacity of gasoline tank, 20 gallons, two in reserve.

COOLING SYSTEM—Extra large radiator with fan running mounted on a pedestal over the timing gear case; fan belt runs vertically, driven by a pulley directly on the crank shaft.

CLUTCH—Multiple disc, alternate bronze and steel plates, running in oil; very sensitive touch.

TRANSMISSION—Selective type of gears, four speeds forward and one reverse, direct drive on third speed; shafts and gears nickel steel, and shafts mounted on imported ball bearings; counter shaft located below driving shaft, enabling use of sealed bearings, thereby avoiding oil leakage.

PROPELLER SHAFT—Nickel steel, with new and improved universal joints; driving pinion forged integral with the shaft.

REAR AXLE—Driving axle of floating type, with hubs mounted on tubular axle which carries the weight of the car; drive is bevel gear through clutch driven hubs; driving gear housings manganese bronze, while differential case is drop forging.

BRAKES—Hand and foot brakes, mounted on rear wheel drums, both interior expanding; hand brake pulls towards operator.

FRONT AXLE—Drop forging, manganese steel, I beam section; wheel hubs mounted on imported annular ball bearings.

WHEELS—36-inches with 1⅝-inch spokes, second growth, grade A hickory.

TIRES—Rear 36 x4½-inch, front 36 x 4-inch. Make optional.

FRAME—Pressed nickel steel, with 2½-inch drop forward of rear axle.

CONTROL—Spark and throttle on steering wheel, with stationary segment and foot accelerator pedal.

MUFFLER—Cut-out on all cars.

WHEEL BASE—119 inches.

SPRINGS—Front, semi-elliptic; rear, improved type of platform or three point suspension; size of springs greatly increased; quality of spring steel is most expensive and finest obtainable.

BODY—Double side entrance, seven passenger capacity, full aluminum, ironed for top; extra seats can be folded or removed instantly.

EQUIPMENT—Two acetylene head lights, generator, two oil side lights, oil rear light, large horn, brass coat rail, brass foot rest, tire carriers, trunk rack, tool box on step with full set of tools, including pump, jack and tire repair kit.

WEIGHT—2,850 pounds.

PRICE—$4,500.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

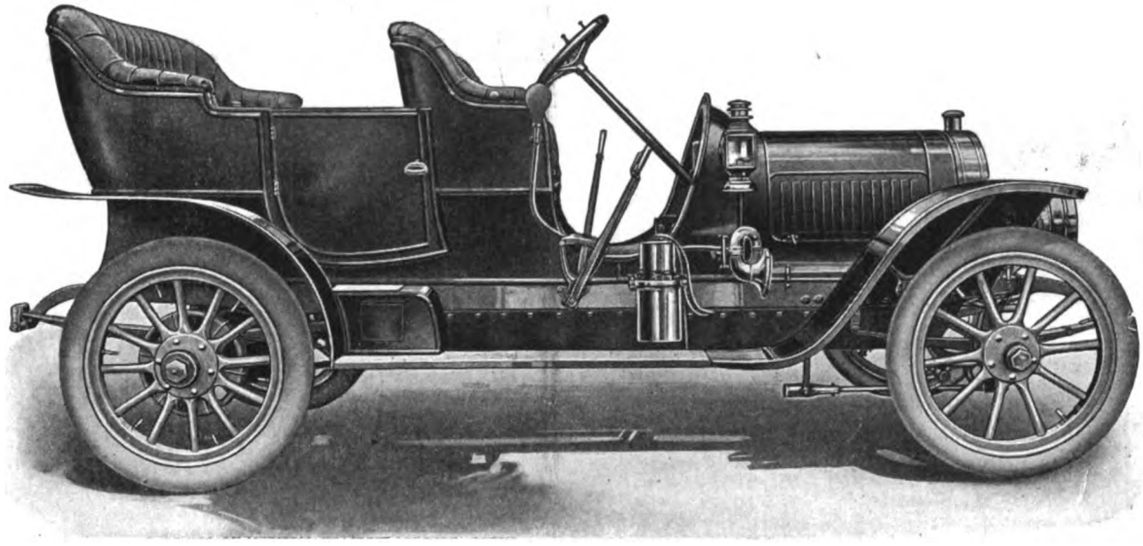
Grand Central Palace Show, October 24th to 31st

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The Pope Hartford "30" for 1908

$2750

Says the Hartford Globe, Sunday, Oct. 6th:—
"Certain it is the new Pope-Hartford is a beauty. The lengthened wheel base, the larger wheels, longer springs; the new convex body lines, the large and roomy tonneau, with large side door; the rakish steering column with larger steering wheel, with the front axle directly under the radiator, gives the car an appearance that is at once distinctive and decidedly 'smart.'"



Changes in design and construction of the Pope-Hartford for 1908 are not of a revolutionary character. The modifications adopted tending only to further refine and bring the product thoroughly in line with the best and latest practice.

The 1907 Pope-Hartford was right. It made hill-climbing, touring, track and reliability history.

The 1907 Model L is admittedly and unquestionably the speediest, most powerful, most popular and highly endorsed car in its class of the year.

Model M, its successor, has now been on the road many weeks; has been put to every conceivable road, hill-climbing, speed and reliability test.

SOME NEW FEATURES FOR 1908 ARE AS FOLLOWS:—

Selective change speed gear. Gears of Chrome nickel steel. Road wheels 34x3½ and 34x4, respectively. Wheel base 112 inches.

New carburetor giving all the flexibility of the multiple jet vaporizer. Quietness of operation of all gears. Radiator is now located directly over front axle.

The Clutch same as Model L, excepting cork inserts to the number of 34 have been added. Rear axle is now of the clutch drive type, rather than the semi-floating variety as used in the 1907 car.

Clutch type of axle the very latest practice. Chrome nickel steel shafts. This new clutch type of axle reduces all friction so it is now possible to push the Model M car when standing on the level with one hand.

The brakes, both internal and external, have been increased in surface, width and diameter. An important detailed improvement of rear braking construction is the taking of the driving and braking torque by the same member of the hub construction.

The steering column has been given a larger rake, and a much larger hand wheel is supplied.

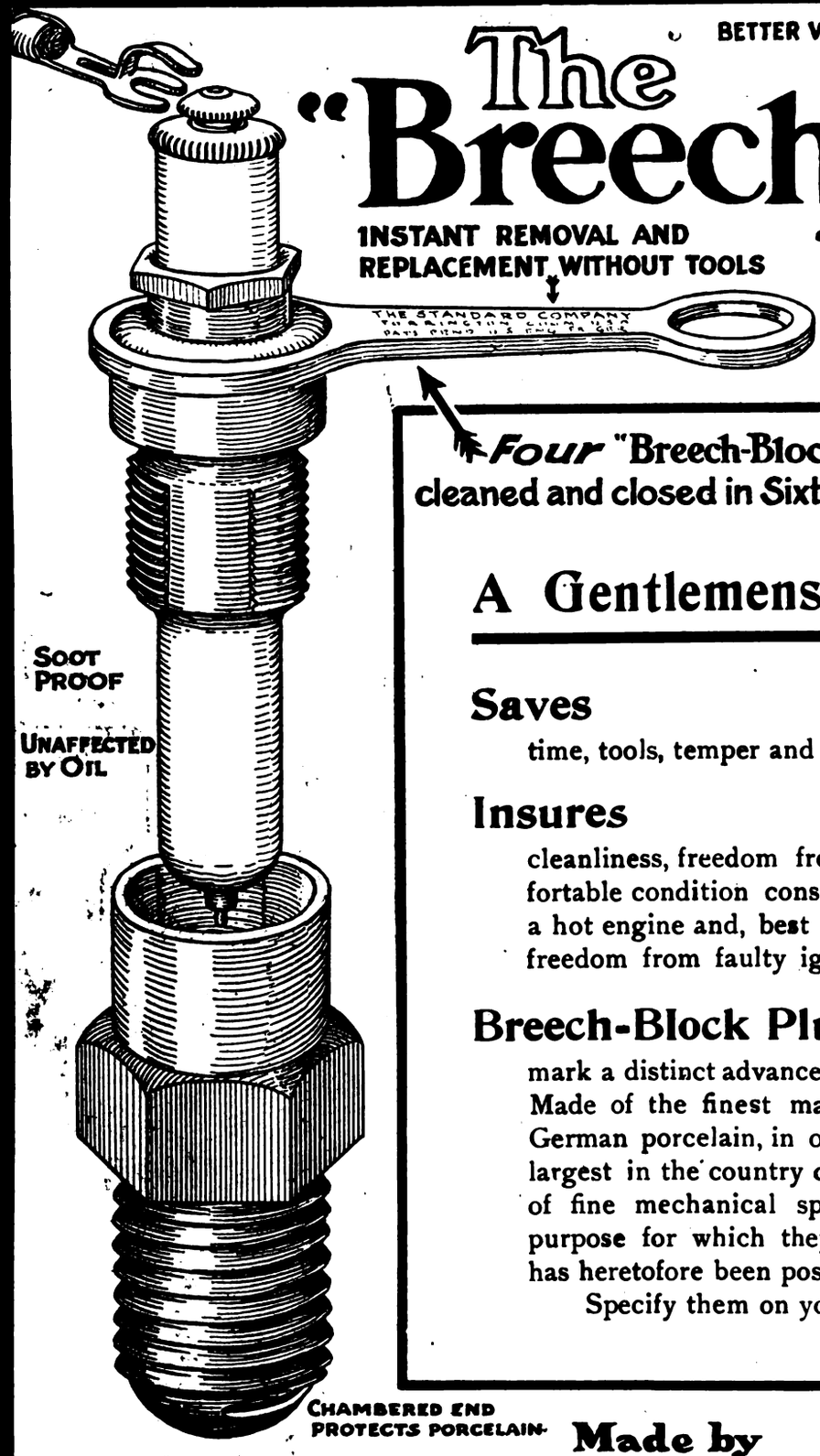
The 1908 body has convex lines, is decidedly more roomy. Front springs are 2x38 and the rear 2x52. Aluminum guards with patent leather aprons.

Ask us to do any "stunt" you want; ask us to go where any car will go irrespective of make, price, horsepower or number of cylinders.

If you make the others, in and out of our class, do the same things under the same conditions, you'll buy a Pope-Hartford.

The Pope Manufacturing Company, *Members A. L. A. M.* **Hartford, Conn.**

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BETTER VALUE THAN ANY OTHER PLUG MADE

The "Breech-Block" Plug

INSTANT REMOVAL AND REPLACEMENT WITHOUT TOOLS

Four "Breech-Block" plugs can be opened, cleaned and closed in Sixteen Seconds by the watch.

A Gentlemens' Spark Plug

Saves

time, tools, temper and trouble;

Insures

cleanliness, freedom from the "fussed-up" uncomfortable condition consequent of working around a hot engine and, best of all, insures comparative freedom from faulty ignition.

Breech-Block Plugs

mark a distinct advance in spark plug construction. Made of the finest materials, including genuine German porcelain, in our own factory (one of the largest in the country devoted to the manufacture of fine mechanical specialties), they fulfill the purpose for which they are designed better than has heretofore been possible.

Specify them on your cars.

Made by

The Standard Co.,

Torrington, Conn., U.S.A.

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AJAX

WRAPPED TREAD

TIRES

GUARANTEED

FOR

5,000 MILES

RIDING

And we mean it

Making the best tire, backing it by the most liberal guarantee, and standing squarely behind every word of that guarantee has placed us in thirteen months among the leaders of the tire industry.



1908 EXHIBIT

AT THE

Grand Central Palace Show

AND AT

1776 BROADWAY

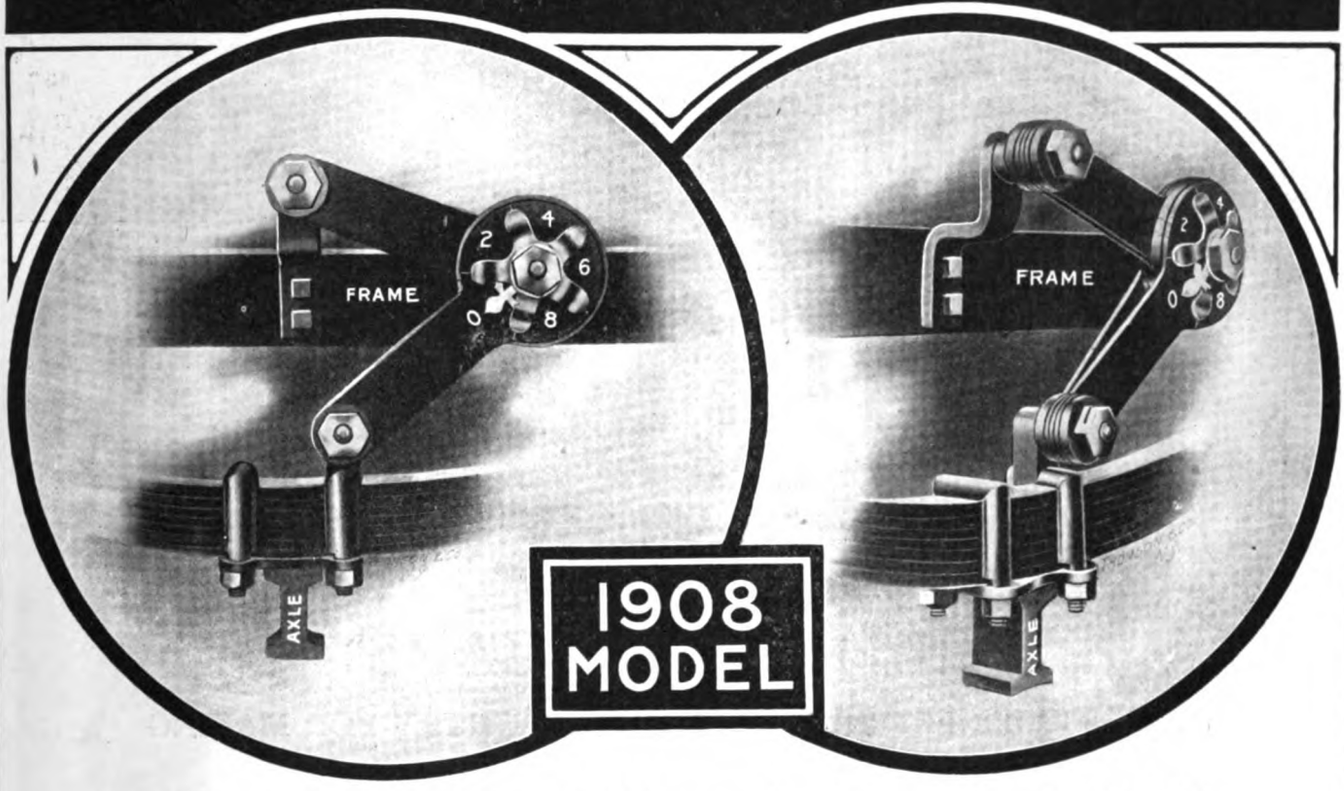
Ajax-Grieb Rubber Co.

FACTORIES:
TRENTON, N. J.

Branches in all large cities.

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TRUFFAULT-HARTFORD SHOCK ABSORBER



"Renders Real Rough Road Relief"

¶ The spring action of a car affects its smooth running qualities. Proper control of the springs prevents excessive oscillation, which insures LESS WEAR and TEAR, LONGER LIFE OF TIRES, GREATER SPEED AND GENUINE **COMFORT.**

¶ This control of the springs can be secured only by the use of TRUFFAULT-HARTFORD Shock Absorber—the device that has made SAFE, ECONOMICAL AND COMFORTABLE automobiling possible.

¶ In the 1908 model we believe that we have practically obtained perfection.

¶ A distinctly new feature has been added, consisting of a regulating dial with indicator, making it possible for even a novice to obtain a perfect and uniform adjustment to suit the exact requirements of the car as measured in terms of its gross weight, and easily secure the maximum benefit.

¶ The Truffault-Hartford is the only spring retarding device manufactured with a regulating dial. It is automatically lubricated, absolutely dust and water proof, interchangeable, practically indestructible and ***fully guaranteed.***

¶ Twenty prominent automobile manufacturers now use the Truffault-Hartford Shock Absorber exclusively as part of the regular equipment of their cars.

¶ Write for our "Ruff Road" booklet, Dept. I, or a demonstration will convince you—see us at the shows.

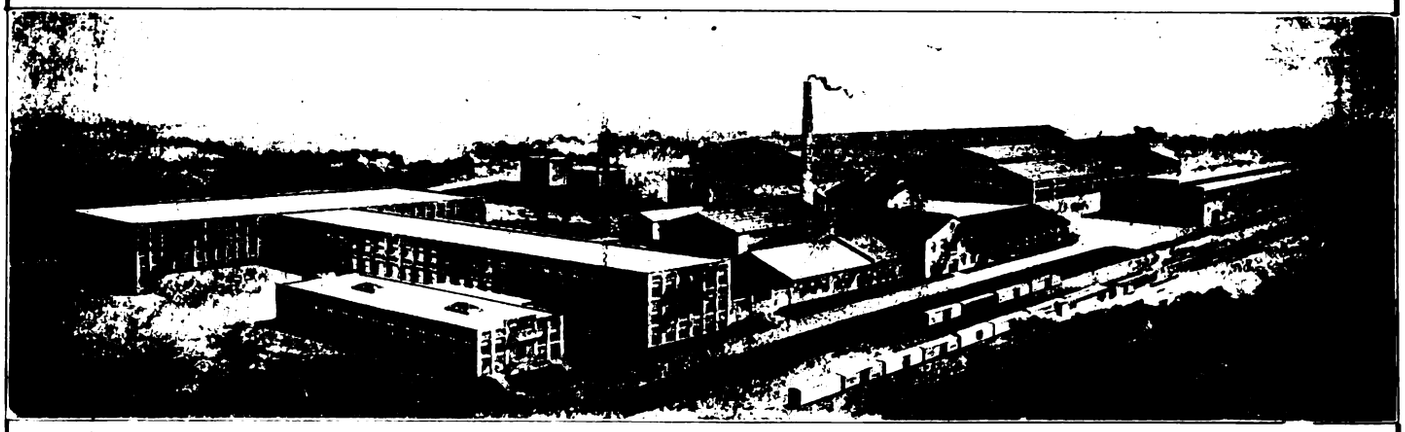
HARTFORD SUSPENSION CO., 66 Vestry St. New York

SEE US AT THE SHOWS

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PLANT OF

THE WHITLOCK COIL PIPE CO.



HARTFORD, CONN., U. S. A.

WHITLOCK

COOLERS AND MOTOR CONNECTIONS OF ALL KINDS WILL BE USED AS A PART OF THE REGULAR EQUIPMENT FOR

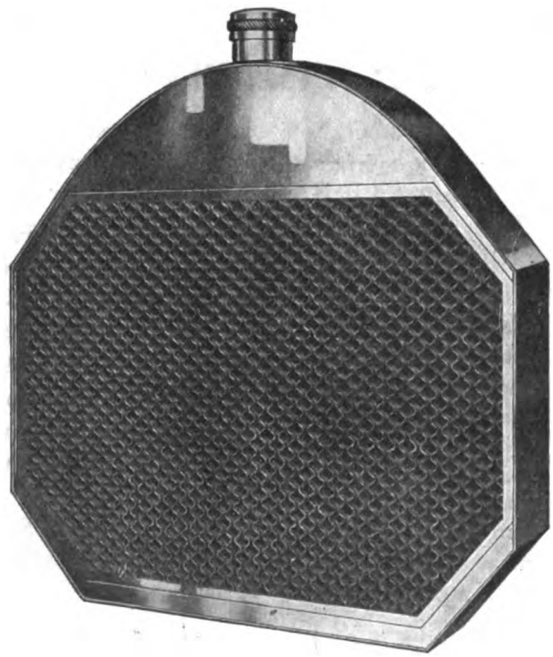
1908
HIGH GRADE CARS

We Have the FINEST FACILITIES in this COUNTRY FOR MAKING

COOLERS

EXHAUST PIPES

INTAKE PIPES



HOODS

HINGES

MOTOR CONNECTIONS

We have over 40,000 Coolers of one type alone on American cars

Over 1500 of this type were placed on the highest grade of English cars in England during the past year.

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"KEEP YOUR EYE ON CONTINENTALS"

"They're Specifying

Continental TIRES

on 1908 Cars"

Continental Caoutchouc Company

43 Warren Street, New York

JOE M. GILBERT, General Manager

ALSO

2100 Broadway, cor. 73d St., New York. 729 Main Street, Buffalo, N. Y. 260 Jefferson Ave., Detroit, Mich.

DISTRIBUTING AGENTS

Post & Lester Co., 821 Boylston St., Boston, Mass.
Jas. L. Gibney & Bro., 211 N. Broad St., Philadelphia, Pa.
Continental Agency Co., 1268 Euclid Ave., Cleveland, O.
Western Continental Caoutchouc Co., 1438 Michigan Boulevard, Chicago, Ill.
Pacific Continental Tire Agency, 640 Golden Gate Ave., San Francisco, Cal.

TRADE-MARK

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"The Tire of the Day"

Great Innovation for 1908

Never mind what your experience has been with any other tire; never mind what "the other fellow" says, be absolutely on the safe side in selecting your tires.

Specify and insist on

G & J Tires

"The tire without a peer."
One quality—absolutely the best.



For Your New Car

Specify the new Midgley Universal Rims, G & J Tires, and you will have absolute tire perfection.

G & J Tires With Midgley Tread Positively Non-Skid

G & J TIRE CO.

INDIANAPOLIS, IND.

BRANCHES

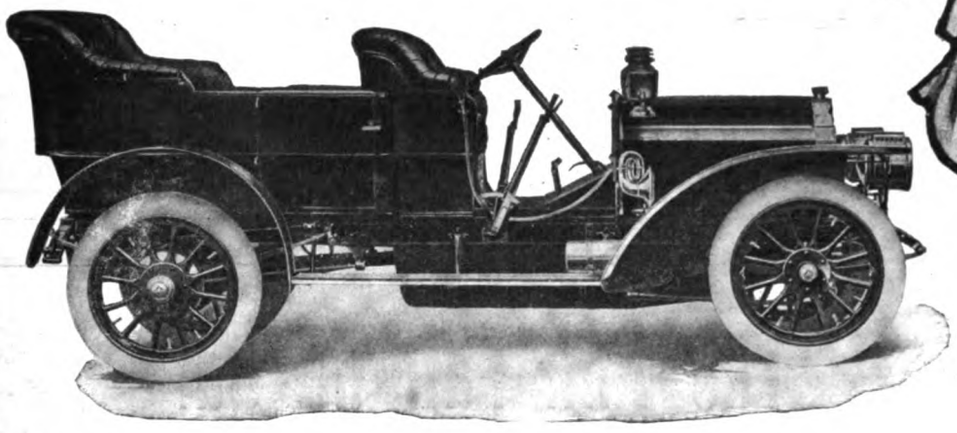
BOSTON—243 Columbus Ave.
CLEVELAND—Now No. 1837 Euclid Ave.
DETROIT—247 Jefferson Ave.
CHICAGO—1434 Michigan Ave.
NEW YORK—10 W. Sixtieth St.
SAN FRANCISCO—423-433 Golden Gate Ave.

DISTRIBUTING AGENCIES

G & J TIRE AGENCY, Denver, Colo., 1528 Court Place.
G & J TIRE COMPANY, Buffalo, N. Y., 912 Main St.
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WESTERN RUBBER AND SUPPLY CO., Los Angeles, Cal., 1010 S. Main St.
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NORTHWEST AUTO SUPPLY CO., Spokane, Wash., 1419-27 First Ave.
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PLANT BROS., Minneapolis, Minn., 21 S. Second St.
CENTRAL RUBBER CO., Chicago, Ill., 84 Lake St.
SYRACUSE RUBBER CO., Syracuse, N. Y., 212-214 S. Clinton St.
ROCHESTER RUBBER CO., Rochester, N. Y., 55 Main St. East.
JEROME P. PARKER CO., Memphis, Tenn., 181-183 Madison St.

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Garford



The representative car, "THE TYPE" so to speak may never have existed, but if it could be produced would be more suitable to its environment than any car existing at the same time. Every detail would have been established by evolution rather than by "personal engineering idiosyncrasy." It would be the safest car one could buy.

The design of the Garford car has been developed to come as near "THE TYPE" as possible, and embodies the experience of all cars rather than the limited experience of a few individuals working alone on a restricted line.

NO "TALKING POINTS" OR "EXPERIMENTS"

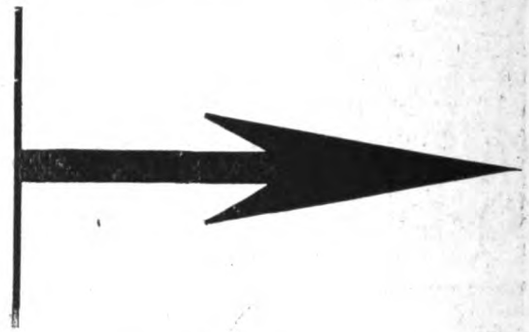
ADDRESS

Eastern Inquiries
Garford Motor Car Co. of New York
1540 Broadway, New York City

Western Inquiries
Garford Motor Car Co. of Cleveland
1372 East 12th St., Cleveland

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MR. MOTORIST:
There's some interesting news on the other page. Digest it.



AMERICAN LOCOMOTIVE LICENSE BERLIET MOTOR CAR

The Anti-Fatigue Car

It never grows weary of well doing. All are beginning now to realize what the users of it and its builders always have known—that the

AMERICAN LOCOMOTIVE LICENSE BERLIET MOTOR CAR

American Locomotive Motor Car

is the "greatest touring car in the world, bar none." Tourists boast that with this machine they can always keep their schedule and those who have driven it farthest, say:

"IT STAYS NEW"

Imported Materials. American Workmanship.

Vanadium, "the anti-fatigue metal," is in ALL its steel and iron.
What lasts best, *is* best.

The energies and backing of a $50,000,000 company are behind it.

AMERICAN LOCOMOTIVE AUTOMOBILE COMPANY

1886 BROADWAY, NEW YORK **Factory, Providence, R. I.**

PARK SQ. AUTO STATION, Boston
AMERICAN LOCOMOTIVE AUTOMOBILE AGENCY, Pittsburg
W. W. SHAW CO., Chicago

To keep posted, read

THE MOTOR WORLD

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If Motorists would equip their cars with good tires they would have a feeling of contentment that should make motoring a decided pleasure.

Branches and Agencies

New York:
214 W. 47th St.,,
17 Warren St.

Chicago:
81 Michigan Ave.

Boston:
Motor Mart.

Syracuse:
214 Clinton St.

Buffalo:
379-383 Washington St.

Rochester:
55 Main St. E.

Pittsburg:
913-915 Liberty Ave.

Philadelphia:
13th & Cherry Sts.

Cleveland:
1829 Euclid Ave.

Dayton:
405-411 East Third St.

Minneapolis:
708 Hennepin Ave.

Atlanta:
90 No. Pryor St.

St. Louis:
538 N. Vandeventer Ave.

Kansas City:
605-607 E. 15th St.

Denver:
1562 Broadway.

Los Angeles:
118-122 E. Tenth St.

San Francisco:
423-433 Golden Gate Ave.

Portland:
86 Sixth St.

Seattle:
Ninth Ave & Pike St.

Morgan & Wright Tires are ever ready to supply the Motorist with proof conclusive that there is lots of contentment stored away in good tires.

Some Motorists don't know this—that's because they don't specify good tires.

MORGAN & WRIGHT TIRES ARE GOOD TIRES



FOR CLINCHER



FOR DUNLOP
(Note rubber filler in clincher on left.)

The Improved Midgley Rim, illustrated above, accommodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.

MORGAN & WRIGHT, DETROIT

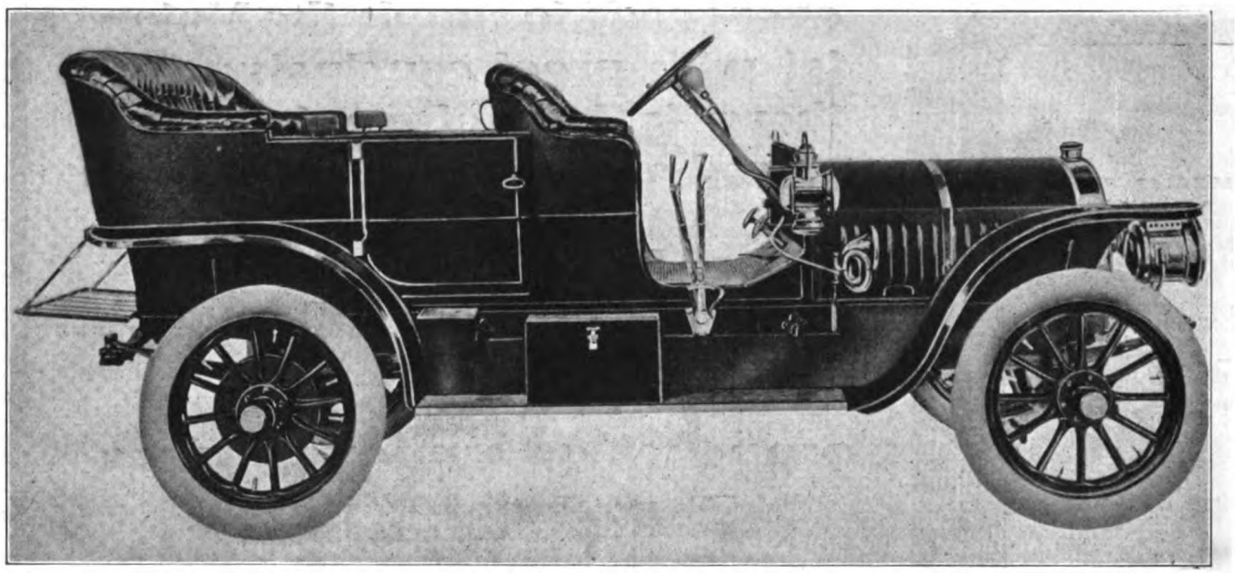
Grand Central Palace Show—Space 158.
Madison Square Garden Show—Space 78.

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National

MOTOR CARS

THE ALL BALL BEARING CARS



THE 1908 LINE

consists of two 4-cylinder and two 6-cylinder models in Touring Cars, Limousines and Roadsters, each equipped with National Ball Bearing Motors—the entire line embodies the tried and proven National type of construction, refined and perfected in all details to the highest degree.

See our Exhibit, Space 18, New York Show, October 24 to 31 at Grand Central Palace

WRITE FOR DESCRIPTIVE MATTER

National Motor Vehicle Company

1007 E. 22d Street, - - - Indianapolis, Indiana

Member American Motor Car Mfrs. Ass'n, N. Y.

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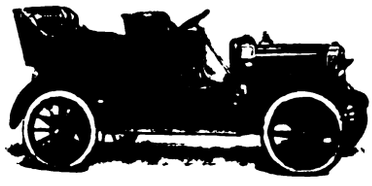
The fact that there are so many of you

and only one of me prevents my being able to meet every one of you who read this ad and telling you what a splendid line of cars you'll find at the "Maxwell" exhibit at the Grand Central Palace Show, October 24th to 31st.

First and foremost the new model D, Four-cylinder 26 H. P.

"Maxwell"

at $1750



stands out as the greatest achievement since the automobile was invented. It brings to the motoring public a four-cylinder touring car of the most advanced type, a car at a price extraordinarily low, supplying all the efficiency of the extravagantly priced car.

This car is the triumph of Mr. J. D. Maxwell's career—and those who know the automobile industry know that Mr. Maxwell's name heads the list of American motor car designers.

During the past year Mr. Maxwell devoted his entire time to the perfecting of this model. Though repeatedly urged he has refused until he was perfectly satisfied with the result, to put it on the market the past year.

As promised, specifications of the Model D Maxwell are here given:

SPECIFICATIONS.

Motor—Four-cylinder vertical, cylinders cast separately.
Transmission—Sliding Gear, progressive type.
Clutch—Multiple disc.
Three point suspension.
Drive—Shaft.
Frame—Pressed steel, channel section.
Lubrication—Positive force-feed.
Ignition—Jump-spark; current supplied by dry cells and storage battery.
Springs—Semi-elliptic.
Carburetor—Float-feed, giving perfect mixture at all speeds.
Cooling—The "Maxwell" thermo-siphon system of water cooling.
Bodies—Sheet metal, upholstered in leather and hair.
Wheel-Base—96 inches.
Weight—2,100 pounds.
Equipment—Three Oil Lamps, tools, horn, etc.

You will be a lot more "motor-wise" after comparing it with others—and it costs you $1,750.

Benj. Briscoe

President,

Maxwell-Briscoe Motor Co.

Members A. M. C. M. A.

40 Mt. Pleasant Street, Tarrytown, N. Y.

FACTORIES:

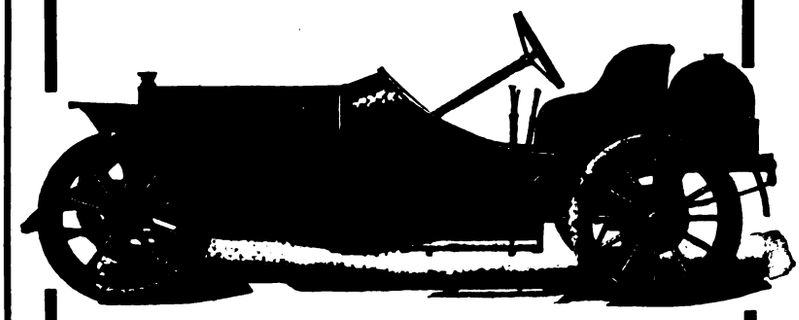
Chicago, Ill., Pawtucket, R. I., New Castle, Ind.

DEALERS IN ALL LARGE CITIES

DRAGON

1908 Roadster

35 H. P., $1850

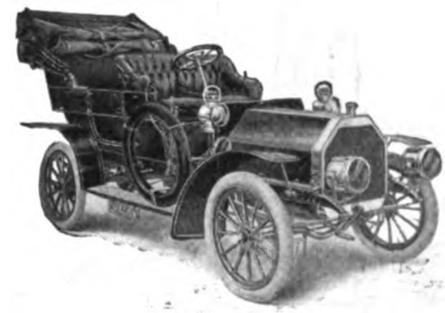


Exhibited at the Independent Show, Grand Central Palace, New York City, October 24 to 31

Four 4½ x 4½ inch cylinders, cast in pairs; valves on one side; progressive type transmission, located on rear axle; I beam drop-forged front axle, roller-bearing rear axle; 96-inch wheel base; drop frame of pressed steel; storage battery ignition; speed up to 55 miles an hour; weight 1,800 lbs.; cone clutch, leather-faced; brakes, 14-inch drums, metal to metal internal and external; ball-bearing front axle and gear box; Diamond tires 32 x 3½ inches. The price includes full equipment of five lamps, horn and tools.

The Dragon Touring Car of 1908

The success of our 1907 touring car has induced us to put a similar model on the market for 1908, embodying all the good features of the 1907 car, together with such improvements and refinements as have been found desirable and necessary. It has all the advantages of correct design, fine workmanship, absolutely best material, handsome appearance and perfect performance on the road. Excessive speed was not the object in designing the Dragon, but it will take you forty miles an hour when you care to travel that fast. Write for information.



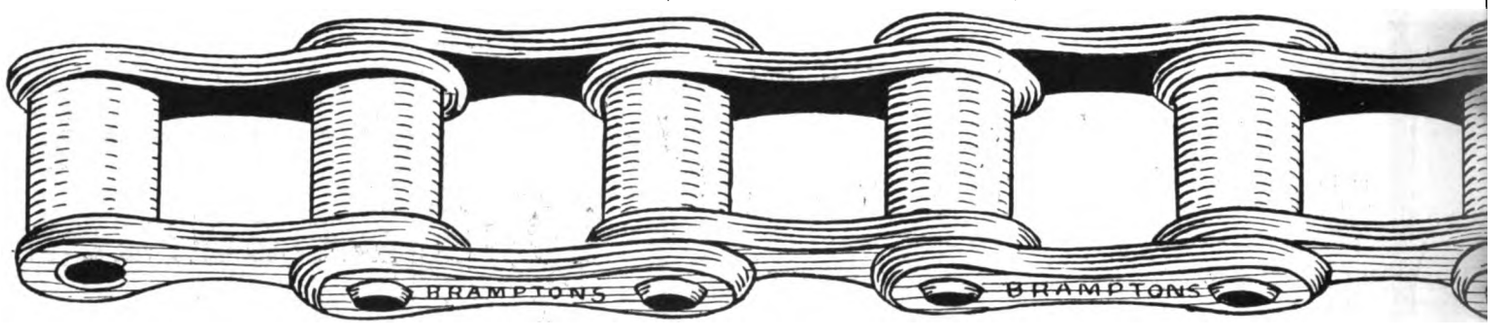
24-26 H. P., five passenger, full elliptic springs, wonderfully easy riding, silent shaft drive, double hub brakes—$2,100 f. o. b. Philadelphia.

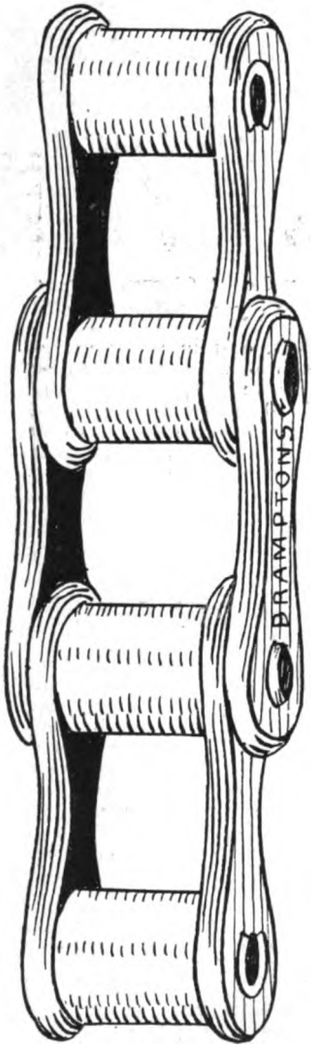
The Dragon Automobile Co.

30th, 31st and Chestnut Streets, Philadelphia

Member A. M. C. M. A.

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THE BRAMPTON CHAIN

The **stongest** chain in the world; made of **self-hardening steel** with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

Some chain manufacturers have copied the Brampton chain as near as they could. Their chain somewhat resembles the Brampton chain in appearance, but they have been unable to copy the material **(self-hardening steel).**

No change has been made in the construction of the Brampton chains in the past ten years. **What does that signify?**

Our price list is not copyrighted and our competitors are welcome to use it. One of them has done so, using our numbers, sizes, prices and descriptive matter.

It is therefore easy to be seen that the Brampton chain is The One Standard of the World.

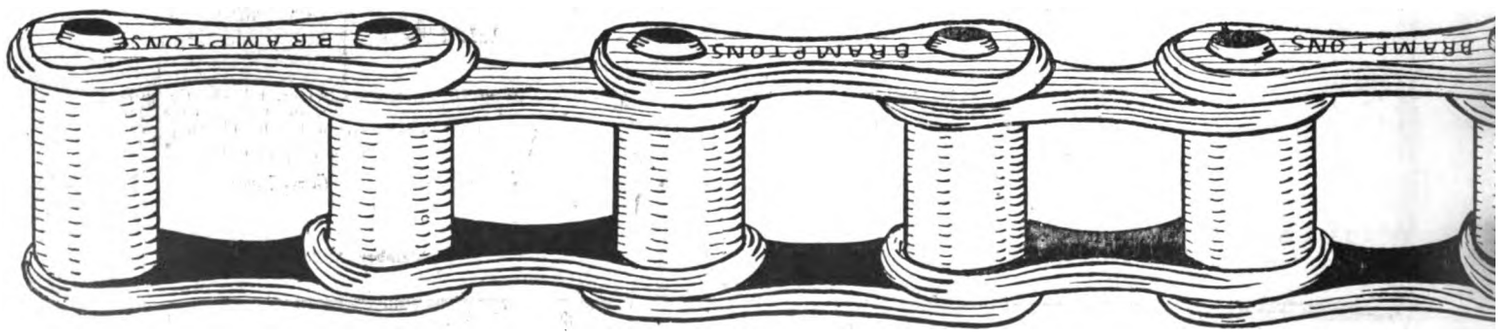
All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitators and get the genuine Brampton.

PRICES THE SAME AS AMERICAN-MADE CHAINS.

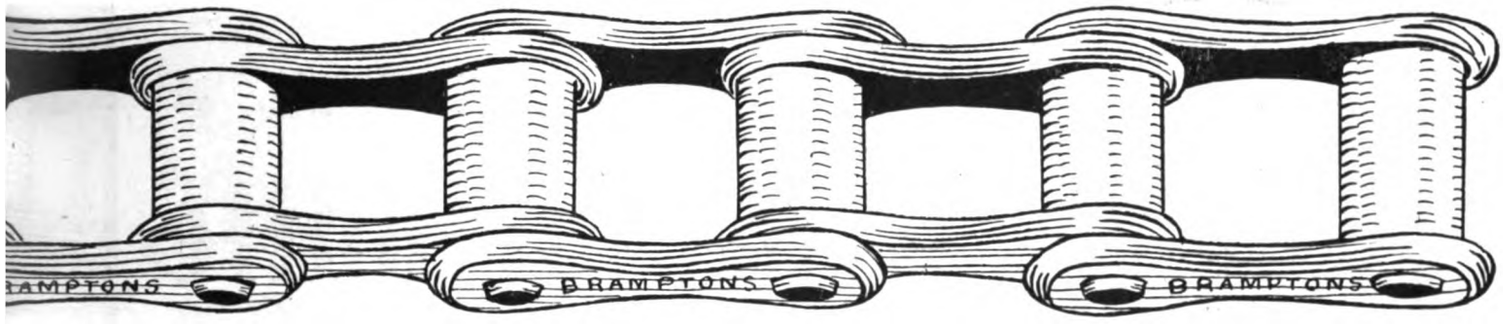
We are the Sole American Agents. Catalog on request.

CHAS. E. MILLER, MANUFACTURER, JOBBER EXPORTER AND IMPORTER

PHILADELPHIA BOSTON CLEVELAND



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Price! That's The Rub

The price of the CELEBRATED BRAMPTON CHAINS, (the best in the world) is the same as the American made chains.

Large Sales

make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufacturers, jobbers, dealers and users.

Price Being Equal

What would you do?

The manufacturers of American motor cars will fit the BRAMPTON CHAIN to your car if you order that way—no extra cost to either you or the manufacturer.

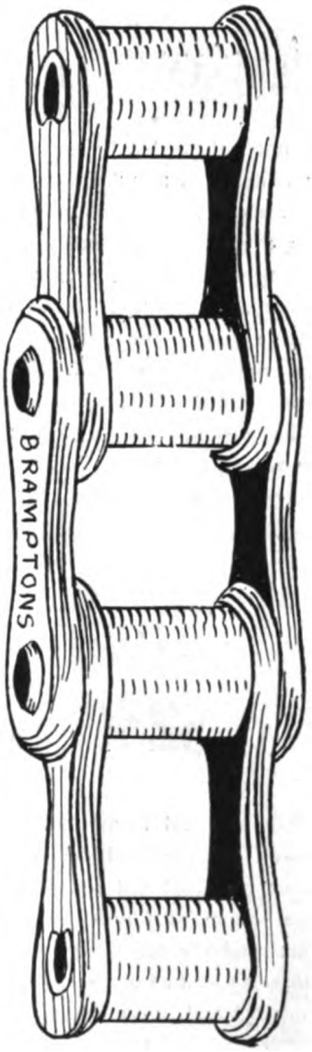
We carry in stock all BRAMPTON Standard Sizes to fit American and Foreign cars.

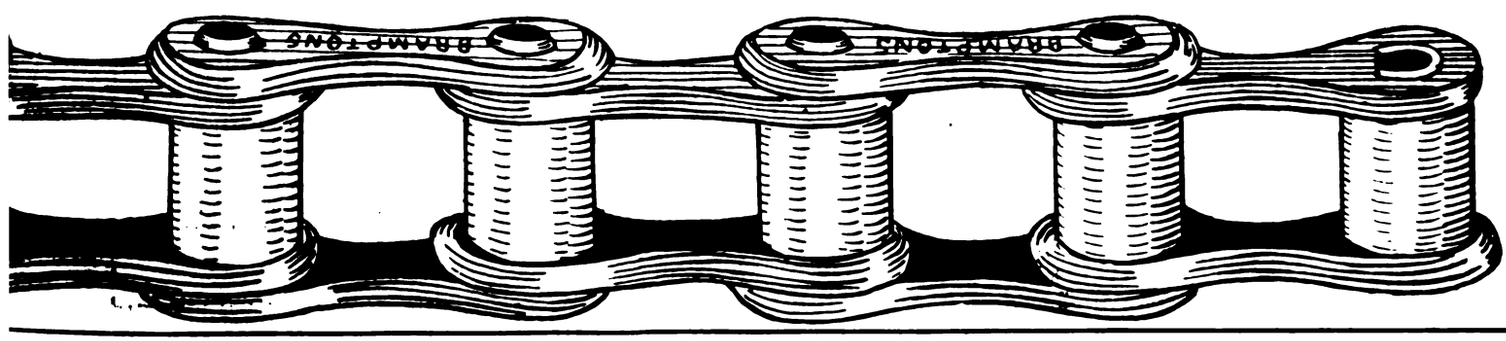
PRICE, the same—QUALITY, that's DIFFERENT.

Agents Wanted in Unoccupied Territory

Home Office, 97-99-101 Reade Street, New York City

DETROIT BUFFALO 54th Street and Eighth Ave. NEW YORK CITY





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The Kiblinger

Automobile Buggy

is not only a decided success at the present time, but it is destined to take the place of the horse and buggy in almost every community. So great is the demand for the Kiblinger Auto among Physicians, Rural Mail Carriers and Farmers that Dealers cannot fail to do a large and profitable business selling these machines. Write to-day for complete catalogue illustrating and describing our six different Models. We build a 4, 6 and 10 H. P. Runabout, also a 4 passenger car with folding seat, which makes it very easy for the Dealer to secure orders.

Discounts and terms mailed on request. Get the agency in your territory before it is closed.

The Price Is $250 to $500

Our Model D as above illustrated has Double opposed cylinder and develops 9-10 H. P. This is the most practical and reliable machine on the market for the service of Physicians, Rural Mail Carriers, and in fact anybody requiring an automobile for business purposes as well as pleasure. This machine has two speeds forward and one reverse and will climb any grade not exceeding 30%. Negotiates muddy or sandy roads with perfect ease. It will travel 6 to 25 miles per hour on high speed and consumes 4 gallons of gasoline per 100 miles.

Don't fail to see our exhibit of the original Motor Buggy at the New York Automobile Show in October.

W. H. Kiblinger Company

Box 250 **Auburn, Ind.**

EIGHTH NATIONAL

Automobile Show

November 2 to 9, 1907

Madison Square Garden

UNDER THE DIRECTION OF THE

Association of Licensed Automobile Manufacturers

The following Standard **GASOLINE** Cars, licensed under the Selden Patent will be exhibited:

Apperson	Locomobile	Royal Tourist
Autocar	Lozier	Alden Sampson, 2d.
Buick	Matheson	Selden
Cadillac	Northern	Stearns
Corbin	Oldsmobile	Stevens-Duryea
Columbia	Packard	Studebaker
Elmore	Peerless	Thomas
Franklin	Great Arrow	Thomas Detroit
Haynes	Pope-Hartford	Waltham-Orient
Hewitt	Pope-Toledo.	Walter
Knox	Pope-Tribune	Winton

ELECTRIC

Babcock	Rauch & Lang	Pope-Waverly
Studebaker	General Vehicle Co.	Columbia
Baker	Woods	

STEAM

White

Full Exhibit by The Motor and Accessory Manufacturers
Incorporated

FIRST COMPLETE EXHIBIT OF MOTORCYCLES

Unequalled Display of Commercial Vehicles

Admission 50c. Tuesday and Thursday, $1.00

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"American Mors"

THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $4,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

GUARANTEED FOR ONE YEAR

Send for our Catalog. Address Dept. H

The St. Louis Car Company

Automobile Department, St. Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

AGAIN TO THE FRONT

Cadillac

Model G

In the races at Harlem track, Chicago, Oct. 12th, the 20 H. P. $2,000 four-cylinder "Model G" Cadillac again covered itself with glory. The car was a stock runabout which had received no special preparation aside from the removal of running boards and fenders.

It won the five mile contest, defeating a 24 H. P., a 30 H. P. and a 40 H. P. six cylinder car and others.

It also carried off the honors in the principal event of the day, a half-hour invitation race, covering 23¾ miles, or a rate of 47½ miles per hour, defeating a 55 H. P., a 30 H. P., a 60 H. P., a 40 H. P. six cylinder and a 55 H. P. six cylinder.

The Cadillac victories were especially significant from the fact that its rated power was the lowest in the entire entry list, viz.: 20 H. P., and its competitors were rated all the way from 50 to 200 per cent. higher and some of them listing at over double its price.

While the higher powered cars showed great spurts of speed for short distances at times, it was the even running, even balance and unfailing constancy of the Cadillac which enabled it to win.

If it is constancy, ample speed, and ample power you are looking for, the features that make automobiling a pleasure, get a demonstration in a "Model G."

WE ARE DELIVERING 1908 MODELS.

CADILLAC MOTOR CAR COMPANY, Detroit, Mich.

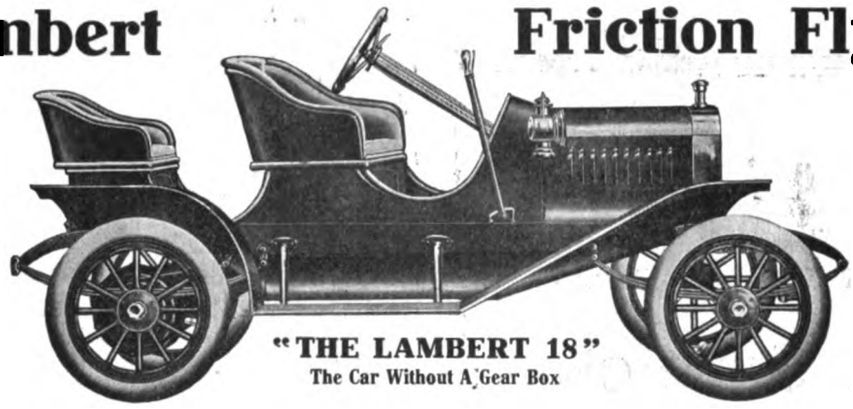
Members of Ass'n Licensed Auto. Mfrs.

Cadillac cars will be exhibited in New York at Madison Square Garden only, Nov. 2-9, and in Chicago at the Coliseum.

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The Lambert Friction Flyer 1908

$800 **$800**



"THE LAMBERT 18"
The Car Without A Gear Box

SPECIFICATIONS.

CAPACITY—Three passengers. WHEEL BASE—95 inches. TREAD—56 inches. FRAME—Pressed steed. WHEELS—30-inch, wood artillery. TIRES—30x3 inch Michelin. MOTOR—2-cylinder opposed, 18 h. p. TRANSMISSION—Friction. SPEED—1 to 35 miles an hour. CARBURETOR—Float feed. IGNITION—Jump spark. RADIATOR—Honeycomb. DRIVE—Single chain to rear axle, encased. BRAKE—External on each rear hub. BEARINGS—Hyatt Roller and Standard Ball. CLEARANCE—12 inches. GASOLINE CAPACITY—12 gallons. LENGTH OF BODY, from inside of dash—76 inches. WIDTH OF BODY, to ouside mud guard—63 inches. WIDTH OF BODY—32 inches. WIDTH OF FRONT SEAT—36 inches inside of cushion. WIDTH OF REAR SEAT—18 inches inside of cushion. HEIGHT OF FLOOR FROM GROUND—29 inches PAINTING—French gray. UPHOLSTERING—Fine quality of leather; springs in cushions and backs of seats. WEIGHT—1,350 pounds. EQUIPMENT—Two oil lamps, horn and full tool equipment. PRICE—$800 complete, f. o. b. factory.

$800 "THE LAMBERT 18" $800

THE BEST VALUE IN AMERICA AT THE PRICE

Ask the best posted mechanic of your acquaintance what he thinks of the Friction Drive, and the answer will be: "The Best on Earth." Ask a farmer and he will not know, because his calling has not required that he keep abreast with the improvements in power transmission—especially as applied to automobiles.

Better still, see the Lambert, have a demonstration—examine the mass of testimony that has come to use unsolicited—we fell sure that the verdict will be: "I will buy a Lambert because it is the simplest, nobbiest and best car on the market for the money." Write for catalogue.

See the Lambert in Section "D" main floor, Grand Central Palace, New York City, Oct. 24-31.

THE BUCKEYE MANUFACTURING COMPANY, *A Few Good Agents Wanted* **ANDERSON, INDIANA**

"LONG-ARM" AUTO PARTS

QUALITY—QUANTITY—QUICKNESS—COUNT IN PLACING ORDERS

AXLES— REARS; FULL FLOATING TYPE, SHAFT DRIVE SINGLE OR DOUBLE BRAKES, QUIET GEARS
FRONTS; SOLID I BEAM SECTION. PADS FORGED ON

All Axles with Plain Ball, "F. & S." or "H-B" Bearings—2 Standard Sizes

CLUTCHES—Cork Insert Design, Cone Type

STEERING REACHES—High-Class, Tube Type

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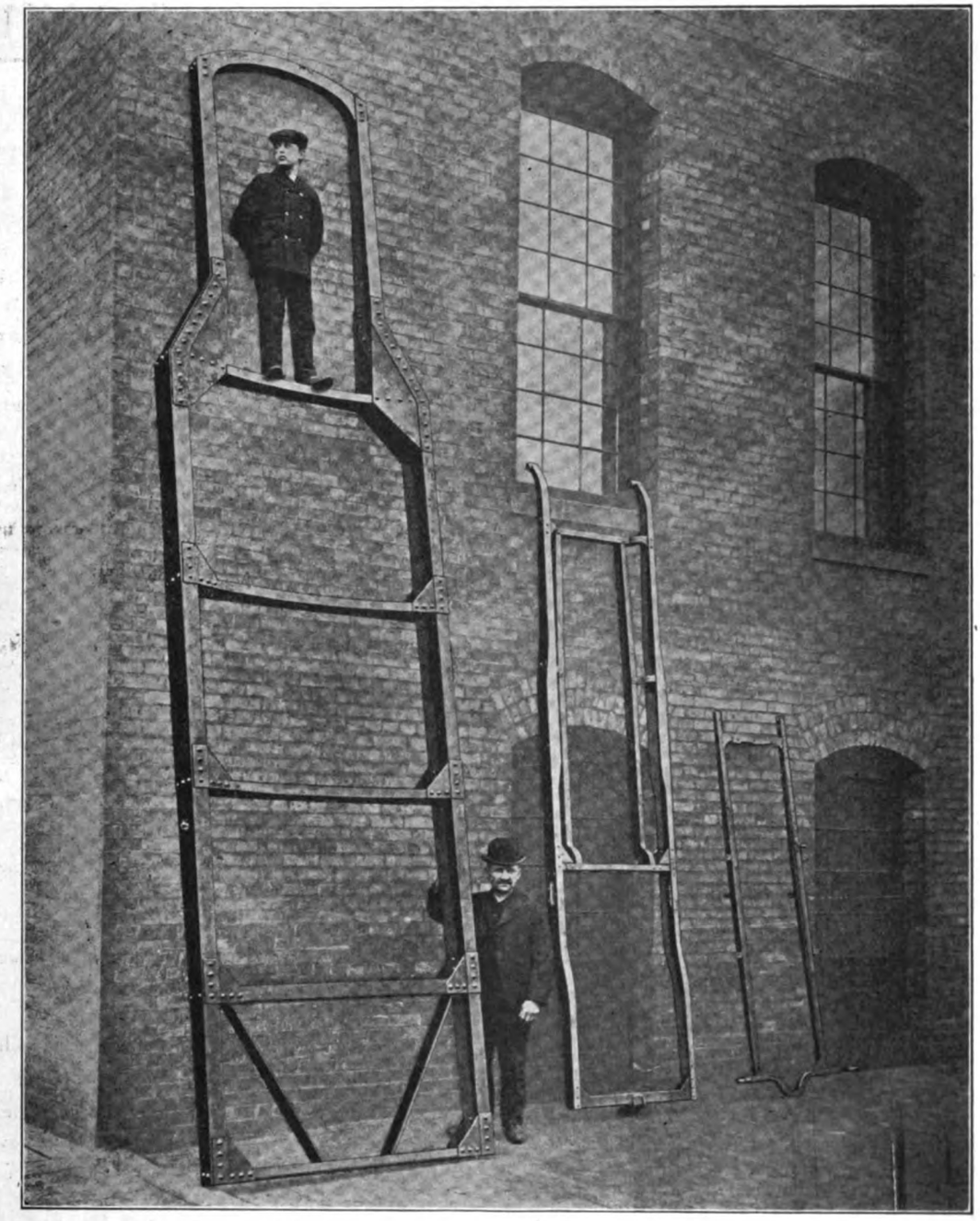
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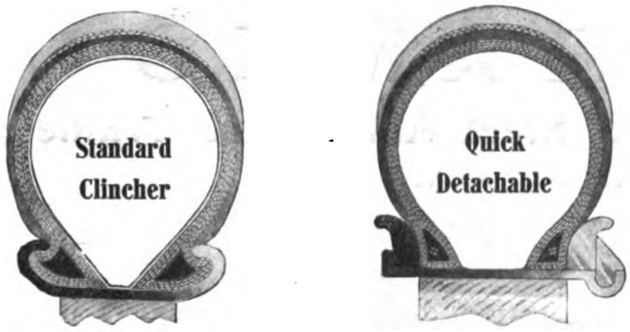
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"Firestone" TIRES

They are a little more expensive to the automobile manufacturer, but he will put them on for you if you firmly insist.

There is not a tire on the market to-day that is made of as good materials as FIRESTONE Tires. That is one reason why they cost a little more and serve a great deal better.

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Made in both Single and Dual forms

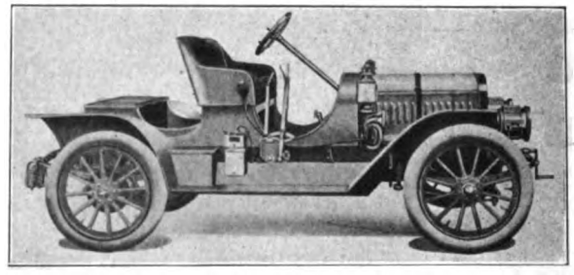
The Recognized Standard Equipment

THE FRAYER-MILLER

Announcement

This is the car with motor cooled by a blast of air from a blower. The ONE air-cooled car made in large and small sizes and able to compete on even terms with the proudest.

The opening of the season of 1908 permits us to record the acquirement of a new and adequate factory at Springfield, Ohio, enabling us to add to the number of cars produced, as well as to the number of styles.



NOTE THE FOLLOWING:

24 H. P. Runabout, 2 passengers	$2,250 00
24 H. P. Combination Car, 2, 3 or 4 passengers. All combinations	2,500 00
24 H. P. Touring Car, 5 passengers	2,750 00
36 H. P. Touring Car, 5 passengers	3,200 00
50 H. P. Runabout, 6 cylinders, 3 passengers	3,500 00
50 H. P. Touring Car, 7 passengers	3,500 00

One, Two and One-Half and Four Ton Trucks

2½-ton Trucks ready for delivery..... $3,000 00

We are one of the half dozen companies delivering Trucks NOW, and **Ours is the best.**

Write for reasons **"why."**

THE OSCAR LEAR AUTOMOBILE COMPANY

SPRINGFIELD, O.

At Grand Central Palace Show, Oct. 24-31.

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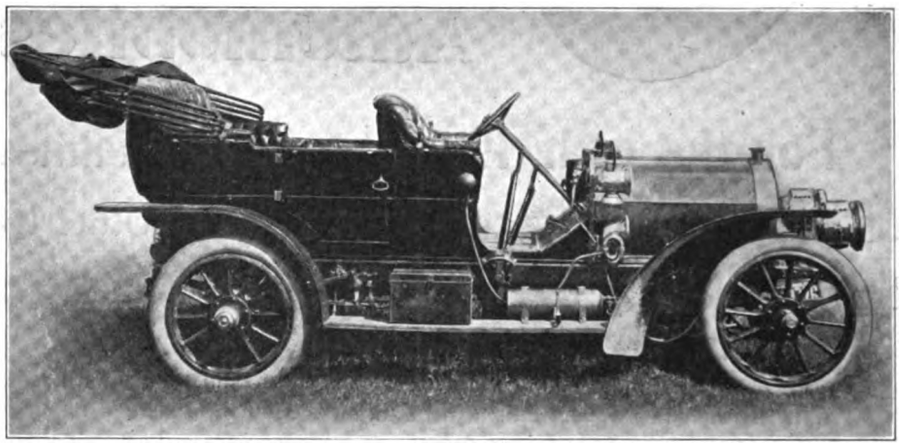
PENNSYLVANIA

50

CHROME NICKEL STEEL
ANNULAR BEARINGS

$2800

VALVE-IN-HEAD MOTOR
ALUMINUM BODY



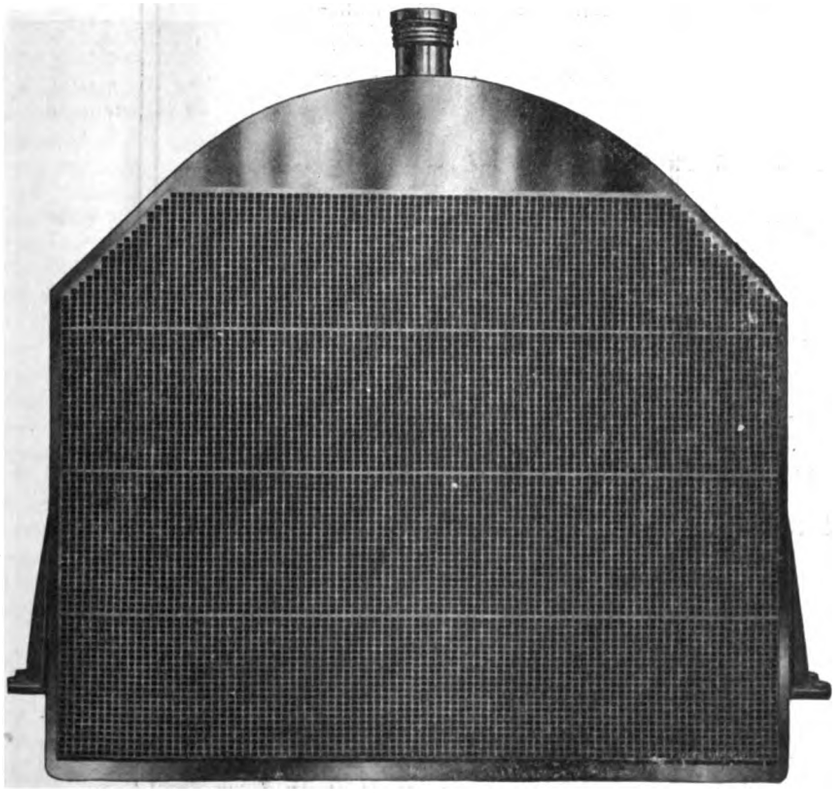
PENNSYLVANIA DISTRIBUTORS.

Los Angeles, Cal.: Greer-Robbins Company, 1501-1505 S. Main St.
San Francisco, Cal.: City Hall Automobile Company, 66 Fulton St.
Boston, Mass.: Frederick E. Randall Company, 245 Columbus Ave.
Chicago, Ill.: Hamilton Automobile Company, 1218 Michigan Ave.
Providence, R. I.: Pennsylvania Motor Car Agency, 133 Washington St.
Denver, Colo.: Denver Omnibus & Cab Company, Denver.
Kansas City, Mo.: Mr. Robert V. Jones, 409 New England Bldg.

PENNSYLVANIA DISTRIBUTORS.

Pittsburg, Pa.: Bellefield Motor Company, 4514-16-18 Henry St.
Brooklyn, N. Y.: Charles F. Batt, 1378 Bedford Ave.
New York: Archer Company, 1597 Broadway.
Spokane, Wash.: L. H. Rose, 1218 Second Ave.
Troy, N. Y.: Lucey Motor Car Company, 231 River St.
Philadelphia, Pa.: West-Stillman Motor Car Company, 253 No. Broad St.
Baltimore, Md.: Rice's Garage, North & Madison Aves.
St. Louis, Mo.: R. T. Harris, Washington Hotel.

Pennsylvania Auto Motor Company, Bryn Mawr, Pa.



¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

¶ **The Mayo Radiator** is **The Quality Radiator.**

¶ If you are a **Quality Maker** better write us at once.

HONEYCOMB, CELLULAR OR FLAT TUBE TYPES.

MAYO RADIATOR COMPANY, New Haven, Conn.

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Rambler
Automobiles

For the year 1908 the entire facilities of the Rambler factory will be devoted to the production of two Models, 34 and 31.

Model 34, a five-passenger touring car with four-cylinder vertical motor, 32 horse power, has selective type transmission with shaft drive. The wheel base is 112 in., wheels 36 in., with 4-in. tires. Price, fully equipped, $2,250. The same chassis, however, with appropriate changes in detail, will be equipped with a roadster body with rumble seat, at the same price.

Model 31 is a five-passenger touring car with detachable tonneau, equipped with the Rambler unit power plant, comprising double opposed motor, multiple disc clutch and planetary transmission entirely enclosed. Price, fully equipped, $1,400. This model can be furnished with torpedo deck in lieu of the tonneau, at $1,300.

Both models have been brought to the highest possible degree of perfection in every detail that insures

Service, Economy and Comfort

A complete line of 1908 Ramblers will be shown at a private exhibit at the salesrooms of the Homan & Schulz Company, 38-40 West 62d Street, New York City, during both New York Automobile Shows.

You cannot afford to miss making a critical inspection of these 1908 models of

The Car of Steady Service.

Advance catalog now ready; write for a copy to-day.

Thomas B. Jeffery & Company

Main Office and Factory: Kenosha, Wis.

BRANCHES AND DISTRIBUTING AGENCIES: Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, October 24, 1907. No. 4

YULE TO ACT AS CO-RECFIVER

Creditors' Chairman Will Assist in Straightening Pope Affairs—Sale of Pope-Toledo Plant in Abeyance.

With the consent of the creditors and agreeable to the Pope interests, George A. Yule, president of the Badger Brass Mfg. Co., Kenosha, Wis., is to become co-receiver of the Pope Mfg. Co. and the Pope Motor Car Co., to act in conjunction with Receiver Albert L. Pope. The court order for Mr. Yule's appointment now is in preparation.

Mr. Yule, who was active in calling the Pope creditors together at the time the embarrassment of the big companies first occurred and who since has been acting as chairman of the creditors' committee, which grew out of that meeting, is generally reckoned a clear-headed, conservative business man who will be able to render valuable assistance in straightening out the Pope affairs. His appointment as co-receiver will also considerably relieve Receiver Pope, the division of duties saving the latter much time spent in traveling and in attending meetings in the West and dealing with other matters affecting that part of the country to which Mr. Yule will be able to devote himself.

The sale of the Pope-Toledo factory is in statu quo. It transpires that the offer made for purchase was merely an oral proposal and has not been placed in such form as to receive formal cognizance or to permit of its being presented to the courts. It also develops that in making the offer of $1,000,000—$400,000 in cash, the remainder in bonds—A. E. Schaaf, the manager of the Pope-Toledo plant, was acting not for Charles F. Schwab, the steel magnate, but for the latter's brother, Joseph.

To Produce Bearings in Nebraska.

The Bearing Company of America, of Omaha, which has been incorporated under the laws of Nebraska, with capital stock of $150,000, has leased and is installing machinery in a disused street car power house at Nineteenth and Nicholas streets, Omaha, and expects to begin operations within two weeks. The concern will manufacture bearings made under the patents of George J. S. Collins, and which the producers think "will be used by all the automobile manufacturers in the country." The officers of the company are: President, Arnold C. Koenig; vice-president and general manager, George J. S. Collins; treasurer, Lysle I. Abbott; secretary, Will F. Seidentopf.

Warren Becomes Sales Manager.

Frank J. Fanning, sales manager of the Haynes Automobile Co., of Kokomo, Ind., has resigned that office to engage in partnership with James Levy, of Chicago, agent for the Autocar and other cars; his resignation will become effective after the Madison Square Garden show. Mr. Fanning will be succeeded by C. B. Warren, who for several years has been manager of the New York branch of the Haynes company. Mr. Warren, during his term of office in New York has been most active in his position, having disposed of more Haynes cars in New York than ever were disposed of by any previous manager.

Winchester Speedometer Stops.

On Friday last, 18th inst., Irving Washburn was appointed temporary receiver for the Winchester Speedometer Co., New York, the action being taken on the petition of three directors for a voluntary dissolution. The concern made what was formerly styled the McGiehan speedometer but did not sell enough of them to create much of a stir. Its liabilities amount to $4,977 and its assets to $1,712.

Bell Trustee for Deere-Clark.

At the meeting of the creditors of the Deere-Clark Motor Co., Moline, Ill., last week, Benjamin S. Bell was chosen trustee. It is stated that a new company may be formed, although the trustee has applied for permission to sell the property.

TO TURN GOVERNORS INTO MONEY

Lee Ephraim's the Boy Who Can Do It!—He Offers an Unparalleled Opportunity for Automobile Manufacturers.

Lee Ephraim is "the goods," and if during show time he is not surrounded by clamoring manufacturers it will be due to no fault of his own. For it is he who holds the key that will unlock the opportunity of a lifetime.

Lee has been an object of keen interest before. Only a few short years ago, he and his brother were in the supply business in Buffalo, and they made such a picturesque failure and in due course Lee made such a wonderful witness that his fame is secure for all time. After his doting creditors had let up on him he came to New York and set up in the sale of second hand and third hand cars, while his brother journeyed to San Francisco where he earned so much of the love of others in the supply business that they look back on the earthquake as a deliverance from some evils at least. Meanwhile Lee has drifted out of old cars and into the sale of new gas tanks. The tanks are empty ones, but there are those who maintain that Ephraim can supply all the gas that may be necessary.

Perhaps it is due to this likelihood that he is enabled now to offer to automobile manufacturers an unparalleled opportunity. His proposal smacks somewhat of publicity promotion, but even if Lee has not organized himself into an association, he is training for entry into that class of press agents that can, to order, "pull off" a hill climbing contest or even a road race for Charity'$ sake. After a fashion Ephraim's scheme makes a "charity" road race look like 29 cents, for while benevolent press agents bait their hooks with sheriffs and the like, Lee is not angling with such small bait. Nothing less than a governor, or rather a string of governors for him!

When he unfolded his magnificent project to an awe-struck manufacturer during

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the past week, he said he had already written to and "landed" eight or ten governors, and that the fishing still was good—that they had expressed the great pleasure it would afford them to drop the cares of State and to ride with such distinguished gentlemen when he called. A camera forms a part of the plot. It will be concealed about the Ephraim person and be "snapped" at the proper moment.

It appears to be Eph's idea that a photographic collection composed of pictures of governors, all seated in the same car and flanked by Mr. Lee Ephraim, will simply set the world afire and cause such a rush for the car in question that the manufacturers of it will have to turn the flood of money in his assembling room.

Lee appears to have secured the camera. All he now requires is a manufacturer able to realize the full merit of his enterprise sufficiently to let him have a car and a chauffeur. The name of the car or of the driver makes no difference to Lee. Oh, yes—and he wants also a mere trifle of $5,000 and expenses for the prodigious task of turning governors into money; he evidently figures that the sale of gas tanks—empty—"on the side" will prevent him from starving.

The enterprise is so stupendous, the opportunity so unparalleled, and the Ephraim reputation so high, that it does not seem possible that less than 57 varieties of manufacturers will be willing to toss $5,000—and expenses into his lap. Therefore apply early and avoid the rush!

Captures Cadillac Tire Order Again.

All 1908 Cadillac cars are to be fitted with the Midgley universal rim, which in almost natural sequence means that they will be fitted with either Hartford, Morgan & Wright or G & J tires. Those tires will be used exclusively and, of course, their makers consider that having again booked the big order in the face of keen competition, it conveys a wholesome moral.

Motor Buggies with Friction Drive.

The Commercial Automobile Co. have set up a plant at 1408 West Fifty-sixth street, Chicago, which already is at work on a line of cars of the motor buggy type, which shortly will be styled and placed on the market. The vehicles, one of which is a truck, will be styled the Hennegin, and will employ a double-opposed motor, a friction drive and 40-inch wheels.

Drake Resigns as Fisk Manager.

F. A. Drake, who succeeded J. W. Bowman as manager of the Fisk Rubber Co.'s New York branch, has resigned that office. His successor has not been appointed.

Pittsfield Spark Coil Increases Capital.

The Pittsfield Spark Coil Co., Dalton, Mass., has increased its capital stock from $20,000 to $100,000. The added $80,000 already has been paid in.

The Week's Incorporations.

Canton, Ohio.—Havana Auto Cab & Garage Co., The, under Ohio laws, with $10,000 capital. Corporators—L. S. McIrwin and others.

Denver, Col.—Felker Automobile Co., under Colorado laws, with $40,000 capital; to deal in automobiles. Corporators—Delia W. Felker, W. L. Dayton and G. A. Maxwell, all of Denver.

Cleveland, Ohio.—Woodland Motor Car Co., under Ohio laws, with $10,000 capital; to deal in automobiles. Corporators—Morris Trenhaft, Joseph C. Block, C. W. Snider and F. J. Moore.

Lincoln, Neb.—Standard Automobile Supply Co., under Nebraska laws, with $10,000 capital; to deal in automobiles and accessories. Corporators—Ole Hibner, H. D. Boodwin, and Martin J. Wolf.

Bayonne, N. J.—William Sandford Co., under New Jersey laws, with $10,000 capital; to deal in automobiles and accessories. Corporators—William Sandford, Charles R. Goldman and John L. Woolson.

Chicago, Ill.—Forty-third Street Automobile Co., under Illinois laws, with $40,000 capital; to deal in, store and repair automobiles. Corporators—Arthur B. McCord, H. J. Osdick and George C. King.

Springfield, Mass.—H. C. Medcroft Automobile Co., under Massachusetts laws, with $35,000 capital; to deal in automobiles, etc. Corporators—D. E. Leary, president, and H. C. Medcroft, treasurer, both of Springfield.

Seattle, Wash.—Queen City Motor Car Co., under Washington laws, with $10,000 capital; to deal in automobiles, etc. Corporators—W. E. McKenzie, Edward Ferris, Frederick Haggist, A. F. George and C. E. Hagyard.

New York City, N. Y.—Motor Car Maintenance Co., under New York laws, with $10,000 capital. Corporators—Nicholas Betajmin, 25 Broad street, New York City; William H. Webster, Pelham, and Thomas J. Toner, Tarrytown.

New York City, N. Y.—Fiat Automobile Co., under New York laws, with $100,000 capital; to deal in automobiles. Corporators—William F. Ashley, Jr., 40 Exchange place; Henry M. Wise, and Robert W. Ashley, 141 Broadway, New York City.

Wilmington, Del.—McCarthy Steel Car Tire Co., under Delaware laws, with $10,000 capital; to manufacture automobiles and kindred products. Corporators—Thomas J. McCarthy, Los Angeles, Cal.; Benjamin Mann, Philadelphia, Pa., and William H. Wallace, Wilmington.

Epidemic of Fires in Garages.

There has been an epidemic of fires recently. Thomas Gehringer's garage at Allentown was damaged on October 13th, together with a touring car. The damage was estimated at $3,000. The garage of C. J. Bousfield at Bay City, Mich., was burned on the 15th. Two cars were destroyed. Loss, $7,000. Several automobiles and buggies were destroyed in a fire which burned Juseph King's garage at Menominee, Mich., 12th inst. Damage, $8,000. Spark from a match fell into a gasolene tank of a car in William S. McKinney's garage at 310 Aiken avenue, Pittsbury, 14th inst. The loss was $5,000. The same amount was the extent of damage caused by fire at the warehouse of the Jonas Automobile Company, Eleventh and National streets, Milwaukee, 19th inst. The origin is unknown. A loss of $10,000 at the building owned by the Quaker City Motor Co., at 50 North Twenty-third street, Philadelphia, 16th inst., completes the list.

Freeport Clung to Shoemaker.

Freeport, Ill., did not speed its parting resident, the Shoemaker Automobile Co., which so recently accepted an invitation from Elkhart, Ind., to locate there. Instead, while eight carloads of the concern's machinery and merchandise were on the railroad tracks awaiting shipment to Elkhart, they were attached by the State Bank of Freeport for a debt of $10,000. The affair gave rise to unpleasant talk, some of which scored the sheriff's office "for suppressing matters of public record." The trouble, however, appears to have been straightened out. It was attributed to "the absence of certain bank officials and misunderstanding of details by others."

Post Once More in Harness.

Wallace B. Post, for so many years "envoy extraordinary" for the Billings & Spencer Co., Hartford, Conn., and one of the most wholesouled men that ever booked an order, is again able to attend to business. For the past six months Post has been practically blind, but care and attention have restored his sight and he is himself once more.

Ford to Use Firestone Tires.

The Ford Motor Co.'s order for tires to meet their entire requirements for 1908, has been captured by the Firestone Tire & Rubber Co. It probably is the largest order ever placed for pneumatic tires, and is in the nature of a tribute to the quality of the Firestone tires, of which the Ford people used several thousands during the current year.

New York Branch for Babcock.

On November 1st, the Babcock Electric Carriage Co., of Buffalo, will open a branch house in New York at 1591 Broadway. It will be in charge of H. E. Wagner, who will have the title and duties of general eastern sales manager.

Cordner Goes to Studebaker.

E. Q. Cordner, manager of the Chicago branch of the Rainier Motor Car Co., has resigned that office to become manager of the automobile department of the Studebaker Bros.' Chicago house.

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ROAST PIG, FACTS AND FIGURES

They Form the Features of Licensed Association's Reception to Newspaper Men —Figures Prove Big Business.

Nearly all the writers and other newspaper workers who will paint word-pictures of the two New York automobile shows during the next two weeks now are well fortified for their tasks. On Monday last, 21st inst., the Association of Licensed Automobile Manufacturers, the sponsors of the Madison Square Garden show, made them its guests and stuffed the whole lot "full up to the neck," with roast pig. The stuffing was done at the Chateau des Beaux Arts, at Huntington, L. I., whither the entire party was conveyed in nineteen 1908 cars, all of which, needless to add, were of the licensed brand, the demonstration of which was an incidental feature of the occasion. The repast was styled a "roast pig luncheon," but, of course, there was more than pig that tickled the palate and more than water that washed it down.

The always-cordial George Pope acted as master of the few ceremonies, and after bidding the guests welcome, made a short address pregnant with hopeful facts and impressive figures. Among other things, he said:

"These 1908 models, which we have had the good fortune to see practically tried out this early, are undoubtedly the finest products in the line of motor cars yet seen and they are destined to sell readily.

"I want to say that in spite of the depression of the stock market, the talk of hard times and the doubts cast upon the wisdom of holding early shows, that the automobile industry is right now flourishing and its prospects are fine. You may take is from me as a manufacturer and one who knows what is going on, that fall orders for immediate delivery of 1908 models are being received by all makers of standard cars.

"The automobile business of 1907 far surpassed that of 1908, and there is good reason to believe that the business of 1908 will show quite as great an advance.

"A long period of weather prejudicial to automobile business was experienced during the early months of this year and there was good reason to fear that the year would show a declination in sales of cars. The facts are interesting. There was no frantic rush of purchasing at any time, but sales were made steadily from about May 1st till October 1st. There has been a longer selling season this year than at any time since 1903 and 1903. The returns upon the sales of cars made by members of the Asciation of Licensed Automobile Manufacturers, who pay royalty upon their output, enable me to speak from exact figures.

"The business done by the licensed makers during the first six months of 1907 was nearly as great as during the whole of 1906. The sales of the 1907 half year amounted to $40,000,000, while for the whole of 1906 they were only $45,000,000. The sales of the first nine months of 1907 have surpassed the total of 1906 by more than $5,000,000, and the total business of this year will exceed that of last year by at least $15,000,000. This is to say that the total business done this year by the licensed makers will show a gain of at least 33⅓ per cent. over 1906.

"The figures justify an optimistic outlook for 1908, as does also the quality of the cars themselves. The American car has rapidly attained the excellence of the foreign product; and it has even demonstrated itself superior for the roads of this country. The industry has withstood the trials of unfavorable weather and the blows of a panicky stock market and is still in good condition as a whole. Every circumstance warrants confidence in a prosperous future for the conservative maker and dealer."

Besnard System for Solar Lamps.

The blinding glare of the acetylene lamp, which, from the standpoint of other road users and of the public generally, has constituted one of the evils of automobiling, is in a fair way of being subdued, or at least controlled. Alive betimes, the Badger Brass Mfg. Co., makers of Solar lamps, have secured the American rights of the famous Besnard system which attains that end. In substance the system affords what may be styles a double light; it both projects and diffuses the rays and includes a shutter operated from the seat by a small lever and a flexible shaft and which, when desired, shuts off the projected and blinding rays, leaving only the diffused illumination; both headlights are connected so that the one lever operates the shutters of both. The Solar people adopted the Besnard system only after many months of experimentation and considering the far-reaching benefits which it affords they very rightly esteem it as a giant stride in lamp manufacture and one that will meet with quick recognition.

Matlack Made Michelin Manager.

J. C. Matlack has been elected vice-president and general manager of the Michelin Tire Co. of America. Matlock was general manager of the International A. & V. Tire Co., at Milltown, N. J., when its plant was taken over by the Michelin interests and was named as the Michelin agent at the time the American company was incorporated. C. C. Harbridge, who is well known in the trade, is to have the management of the Michelin Chicago branch.

Atwood Moves up Aldrich.

R. D. Aldrich, sales manager of the Atwood Mfg. Co., Amesbury, Mass., has been elected secretary of the company. The promotion comes as a well earned reward, as Mr. Aldrich "made good" on the road, winning many friends for himself and the Atwood line of lamps.

AUTOMOBILE ART AT CHICAGO SHOW

One Hundred and Fifty-two—Count 'Em— Oil Paintings Included in Decorations —More Space Obtained, too.

In addition to being an automobile exhibition, it seems probable that the Chicago show, which opens November 30th, will be something of an automobile art gallery, also. For included in the plan of decoration there are 142 oil paintings, all of automobile subjects, and which will cover 8,704 square feet of canvas. Of these pictures 112 will form a part of the background of the booths. They are being made by Haratta, one of the foremost of Chicago's artists. The remainder, covering a space of 8 by 668 feet, will encircle the building, around the gallery front.

The first samples of the arches which are to form the setting for the Maratta pictures have arrived in Chicago and are pronounced superior to last year's work.

As there are fifteen makers of automobiles and forty makers of accessories on the waiting list, some additional space has been pressed into service in the Coliseum basement, making room for three of the automobile manufacturers who had been left out. The west end of the First Regiment Armory gallery will also be used, making room for about ten additional exhibits of accessories. Some of those on the waiting list probably will be located in the commercial vehicle section, in which 26 makers of such vehicles have engaged space, with four more in prospect.

Warner Makes Aggressive Moves.

Having decided to stand by their price on the Autometer and to "cut loose" from jobbers, the Warner Instrument Co. is pursuing its agressive policy with renewed vigor. Further evidence of the fact is contained in the appointment of Clarence A. Shaffle, an experienced territorial typewriter manager to a permanent station in San Francisco, from which he will regularly "cover" California, Oregon and Washington, and in the establishment of a "department of promotion," in charge of Edgar W. Jordan, former advertising manager of the Shaw-Walker Co.

Turns from Incubators to Motor Cars.

Having made a success of incubator manufacture, M. M. Johnson, of Clay Center, Neb., now is preparing to hatch automobiles. To that end he has purchased the plant and machinery of a one-time grain drill concern, and will turn it to use in the production of motor cars. According to a Clay Center correspondent, "Mr. Johnson has some new and original ideas which he proposes to develop in the form of a machine at a price within the reach of a large class of people."

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"Famous Apperson Cars"

¶ The Strongest and for their rated horsepower, the fastest cars in the world.

¶ Interested reliable dealers in unoccupied territory are invited to write us at once.

¶ Four and Six-Cylinder Cars fully equipped, selling from $2750 to $5000 each. Can be seen at the National Shows.

Madison Square Garden, New York, November 2-9, Space 12

Coliseum, Chicago, November 30 to December 7, Space C-1

Apperson Bros. Automobile Company, **Kokomo, Ind.**
Members A. L. A. M.

SIDNEY B. BOWMAN AUTOMOBILE CO.,
225 W. 49th St., New York, N. Y.

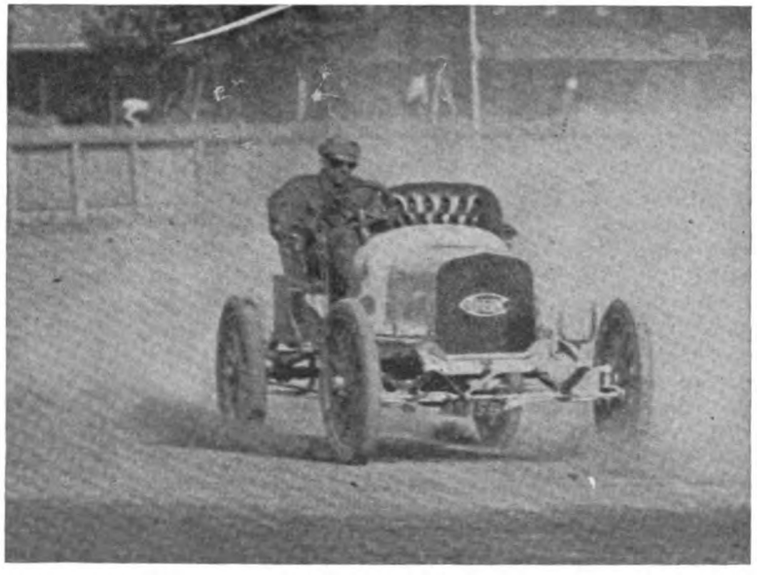
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1240 Michigan Ave., Chicago, Ill.

FRED S. SMITH,
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PHILADELPHIA AUTO COMPANY,
338 North Broad St., Philadelphia, Pa.

"Working in flawless fashion throughout the distance, the (Corbin) car finished the race in 1 hour, 2 minutes, 14⅘ seconds, which is a new 50-mile record for the Readville track."—*Boston Post*, September 15, 1907.

THE FULL-JEWELED CORBIN MOTOR CARS



THE FULL-JEWELED CORBIN MOTOR CARS

THE CORBIN MOTOR VEHICLE COPORATION, New Britain, Connecticut
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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address. "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, OCTOBER 24, 1907

The Promise of the Show.

Now that the automobile, generally speaking, is a pretty well developed piece of man's ingenuity and handiwork, even the half-informed visitor no longer looks for "startlers" at the annual exhibitions. The casual dropper-in probably will linger longer and find more to whet his curiosity in the motor buggies than in the big touring cars and limousines.

But for all of that, the foreshadows of the Palace show, as depicted elsewhere in the Motor World, indicate quite plainly that designers have not been content to rest on their laurels. Apart from new cars made by new manufacturers which are but just making their first bid for public favor, the older and established manufacturers will demonstrate that they have still further profited by ripe experience. While they have not been able to perform any wonder-working, their 1908 models constitute evidence that the refining hand found more room for work than there was reason to expect would prove the case.

Nor have the producers of parts and accessories stood still. The volume of newness which the show will disclose is of surprising extent. Even in respect to tires, which it was supposed had settled into pretty well defined channels, there is newness, not of the freakish sort, but coming from makers of the proudest repute.

The man who merely skims the surface of the show probably will find little to satisfy curiosity, but the one who really seeks for it, will discover very much that is not only interesting but instructive and "primed" with a reading of the Motor World's forecast his task will be rendered very much easier.

The Passing of "The Game."

Indications make it appear that the 1908 shows, which paradoxically will occur during 1907, will mark the flood tide of the industry.

The shows, the first of which will be inaugurated in New York City this evening, will mark also the beginning of the transition of the industry from a game to a business.

Of late years it has been the popular habit to style practically every pursuit of life a "game"; and never was the term better applied than to the methods employed by not a few of those engaged in automobile manufacture. To them it has been, in truth a game. The stake has appeared a rich one and the temptation to "sit in" and play high with limited capital, or insufficient skill or both, has been great. It has attracted many moths to the flame. It is not strange that the wings of some have been singed and that many more have been wholly devoured by the fire.

Of 66 American automobile manufacturers who exhibited their product at last year's show in the Grand Central Palace, one-fifth will be missing from the function which begins this evening. Twelve of the 66 who "sat in the game," drew poor cards or found the gaming so swift and so strenuous that they were forced to quit, receivers appointed by the courts taking charge of their wreckage; four others at least were singed and crippled by contact with the flame. And this is without reference to those manufacturers who exhibited at other shows or no shows, who also played their cards and lost.

The industry is not yet free of those to whom it is but a game. Some of them are "squeezing" their cards hard and to them the shows themselves are the green tables at which they are seated, and which will bring good luck or ill.

Probably this sort of thing occurs in the early life of every industry. It has been aggravated in the case of automobile manmanufacturers by mirrors, which have seemed to reflect only mountains of gold that have lured on those fortune seekers who not unnaturally prefer the shortest cut to wealth.

With the fading of the reflections the industry rapidly will cease to be a game. It will become a business in which the fittest will survive and they who will survive are those who are well entrenched and with flags flying that bespeak proud reputations and the staffs of which rest not so much on the foundations of to-day as on those of to-morrow. In other words, the time has arrived when reputation counts and will bring its full reward to those who possess it.

For the Ladies' Sake.

Although a few of the big runabouts still are distinguished by rumble seats, the very sight of which is suggestive of discomfort, the vast majority have been greatly improved in that respect; their rather precarious rear perches also have been made safer by the quite general adoption of hand rails, thus at last reducing the hazards to which "the man behind" is subjected.

There is one other detail in which such vehicles may be made at least more convenient, not for the occupants of the rumble, but for the woman passenger. Few self-respecting women ever will be content to use the rear seat; it was never designed for woman's use, and few men with any regard for propriety, ever will permit her to occupy it. Her place is in the seat beside the driver, and it is in this fact that the room for improvement lies.

In New York and in some other cities the traffic regulations require that when stopped all vehicles shall have their right sides to the curb. As the big, nominally two-passenger runabouts are all steered from the right hand side, such regulations mean that to either enter or leave the car the passenger must step from the sidewalk onto the street, very much as was the case with the old rear entrance tonneau.

That such a procedure is not either desirable, convenient or in "good form," par-

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ticularly where a woman is concerned, is self-evident. It suggests the advisability of removing the steering wheel from the right to the left hand side of the car. It is certain at any rate, that whoever uses a runabout of the sort in New York's downtown district will discover that a change of the sort is very much to be desired.

New Order of Salesmanship.

Altering conditions in the automobile business have brought about a great change in the kind of salesmen required for the retailing of motor cars. Instances of "black sheep" of wealthy families, who, having failed at everything to which they have previously been put, drift into the selling of automobiles to their social acquaintances and soon make "barrels of money" for themselves, grow constantly less frequent and will soon become almost impossible. In competition with the trained salesmen of the present and future, these aristocratic dabblers will have little chance, particularly in view of the growing familiarity and keen interest in the mechanical features of the automobile which the public at large is evincing.

When the motor car was new and could only be regarded as something representing a luxury of extravagance, the function of the sociable cap with a host of wealthy friends was valuable in introducing it. He had no need of impressive patter about differentials, transmissions, ignition systems and mechanical refinements, to sell cars. Had he talked of such things he would have been voted a bore, because his hearers would have been unable to comprehend him. It was sufficient that he should let choice spirits of his own rollicking disposition, but with more money, taste the joys of motoring, feel the thrill of handling a steering wheel and realize that possession was theirs if they had the price. And with good effect he could "cut in" where susceptible members of the fair sex were not averse to participating in the new sport, creating an envy that suggested the acquirement of a car to the minds of the young bloods who were left behind. In fact the very exclusiveness of motoring lent a peculiar advantage to him who was deepest in the convivialities and foibles of the idle rich. In a degree the sale of motor cars was along wine-agent methods, where either studied or spontaneous recklessness and irresponsibility, with the proper touch of sang-froid, were commercial assets.

But champagne methods are fast disappearing. People buy cars in the same cold, calculating spirit that they would buy hard coal for the winter, or a new lawn mower. Any prospective purchaser can get a host of advisers who will tell him to look out for this point and that until the importance of the mechanical side of the question assumes the utmost importance to him. The salesman who lands his order is the one who has the convincing argument in competition with a dozen others whose arguments almost convince. There is an advantage to an automobile salesman in having a wide acquaintanceship and in knowing how to use it without impairing it, but in a match between trained salesmanship alone and wide acquaintance without training or great natural ability, the former will from now on be constantly the victor. One of the most successful sales managers in the country has found that men who have undergone the schooling of the great cash register and adding machine concerns, where the salesmen are taught in a most thorough manner, make records in selling automobiles that completely eclipse the less aggressive methods of the motor car salesmen who have been able to sell cars principally through wide social relations.

The changed conditions and the growing competition in the trade make it harder and harder for the class of salesmen who have in the past found in the automobile business a means of "easy money." Conversely they make the rewards bigger and more certain for the salesmen who can apply real salesmanship and enterprise to the retailing problem, without regard to social pull or wealthy relatives. The keener the competition the greater will be the premium on ability, in battles where wit and stamina count.

Subduing the Blinding Glare.

The fact that there finally is to become available a means of controlling and subduing the blinding glare attendant on the use of the gas headlights employed on motor cars is in the nature of tardy but welcome news. For if the whole truth be told, the glare of the big lamps has constituted a real evil and a dangerous one.

However advantageous to the man behind the wheel, the projected brilliancy is a menace to the safety of every person approaching from the opposite direction, whether afoot or awheel. The light is not only blinding but bewildering and the number of persons it has caused to "take to the woods" or to the roadside ditches or the number of accidents for which it has been responsible never will be done. But that the number is not small is reasonably certain.

As the Motor World long ago remarked, it always has seemed possible that a hood of some sort could be applied to the lamps that would at least reduce the evil, and now that it has been made possible to fully control the glare and to employ and suppress it at will, every real friend of automobiling will earnestly hope that the means speedily may find its way into universal use. It is needed and needed badly and it will remove one more of the objection which so many of its enemies have so readily brought to bear.

COMING EVENTS

October 26, Allentown, Pa.—Race meet at fair grounds track.

October 24-31, New York City—Automobile Club of America's eighth annual show in Grand Central Palace.

November 2-9, New York City—Association Licensed Automobile Manufacturers' eighth annual show in Madison Square Garden.

November 9-16, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show at First Regiment Armory.

November 15-16, Newark, N. J.—New Jersey Automobile and Motor Club's 24-hour endurance contest.

November 26, 27, 28, Chicago, Ill.—Chicago Motor Club's three days' 600-mile reliability run.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

December 9-14, Detroit, Mich.—Detroit Automobile Dealers' Association's show at Wolff's pavilion.

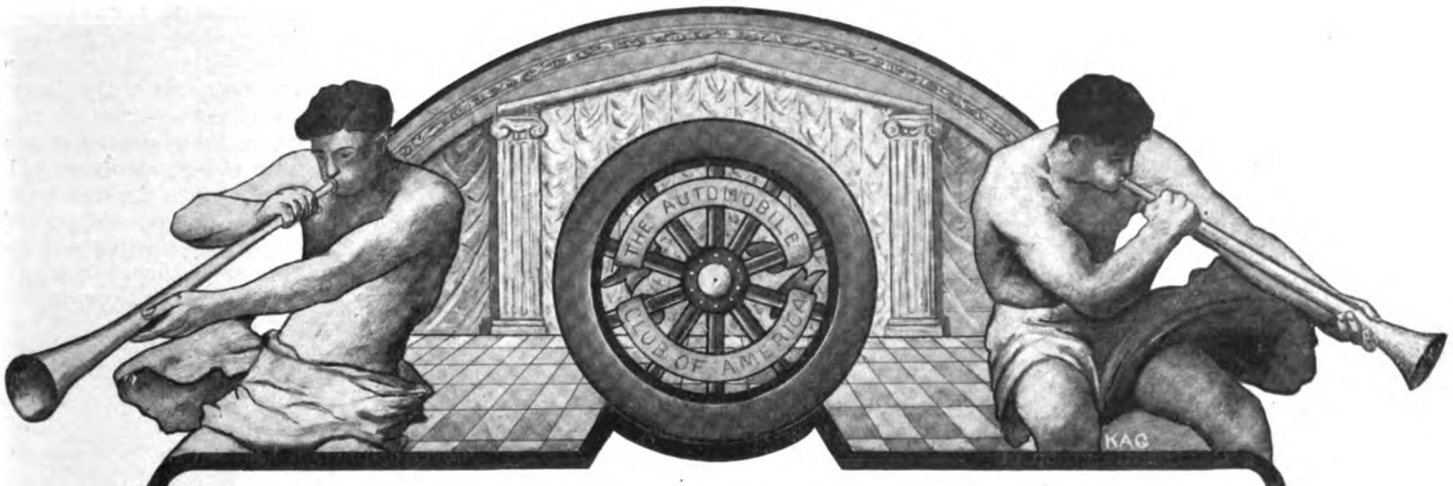
January 14-18, Hartford, Conn.—Hartford Automobile Dealer's Association's annual show in Foot Guard Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sportsmen's Association's show in Light Guard Armory.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's show.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association show in Duquesne Garden.

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Palace Show and What It Promises

Since the time of the late Mr. Shakespeare the assurance has been handed down, "The show's the thing."

Since automobile shows became the vogue and particularly during the last three years it has become necessary to ask, "Which one?"

It is a rather natural question for during this latter period, the automobile situation has been a changing and a strenuous situation.

The division of the trade into two camps, those who are for and those who are against the Selden patent, has put an edge on the razor of competition so keen that it has "forced" the show season, until the spectacle now is presented of two 1908 exhibitions being held while the embers of 1907 still glow bright and red and both of which are open to the whole public.

The first of them will be inaugurated this evening at 8 o'clock, when the doors of Grand Central Palace, New York, will swing wide open and disclose the eighth show in the promotion of which the Automobile Club of America has been engaged, and the third in which it has had the co-operation of the American Motor Car Manufacturers' Association, which represents that part of the industry which is against the Selden patent. It is a numerous part as the show will testify.

Whether it is the show that will prove "the thing" remains to be seen.

If the "Which one?" question was put to Benjamin Briscoe, the head of the American Manufacturers Association, or to William Mitchell Lewis, the chairman of its show committee, or to Alfred Reeves, the galvanic manager of the association—if the question were asked of Gen. George Moore Smith, the A. C. A. chairman, or S. M. Butler, the hardworked secretary of the A. C. A., there is no doubt what their answers would be, if, indeed, they did not answer the one question with another—"What constitutes 'the thing'?" which is even more difficult of reply.

Calendar for the Week.

Thursday, October 24.
Private view of exhibition for A. C. A. members, 4 to 6 p. m.
Formal opening of the Show, 8 p. m.

Friday, October 25.
Merchants' night.

Saturday, October 26.
Smoker, Automobile Club of America, 10.30 p. m.

Sunday, October 27.
Open house at Automobile Club of America.

Monday, October 28.
Engineers' night.
Meeting Committee of Management, American Motor Car Manufacturers' Association, 10 a. m.

Tuesday, October 29.
(Society night.)
Admission $1.00 instead of 50 cents.
Second annual show luncheon of the American Motor Car Manufacturers' Association at Hotel Manhattan at 1 p. m.
Meeting American Motor League, Grand Union Hotel, 8 p. m.

Wednesday, October 30.
Military night.
Conference of Committee of Automobile Manufacturers on track racing.
Meeting directors Motor and Accessory Manufacturers' Association, 10 a. m., Hotel Belmont.
Conference, automobile trade associations with American Automobile Association, 437 Fifth avenue, N. Y., 4 p. m.

Thursday, October 31.
American Automobile Association annual meeting.

They are the men who have borne of the the brunt of this Palace show and that they have borne it well, the show itself will demonstrate.

That it will prove the most eye pleasing exhibition with which the A. C. A. and the A. M. C. M. A. have had to do is certain Grand Central Palace is so constructed interiorally that it does not readily lend itself to decoration, but simple though it may be, the dressing of autumn foliage, harmonizing with a soft green background and dark red carpeting should afford the out-of-doors atmosphere that has been sought and prove both uncommonly agreeable and effective.

The fact that a number of the partitions which divide the Palace into so very many rooms, galleries and passageways, have been removed for this occasion, should also render the show more agreeable and more satisfying from the visitor's standpoint and assist in the effectiveness of the exhibition as a whole.

The roster of the show includes the names of 64 manufacturers of cars of one sort or another. Mainly their product is of the pleasure type but five of them devoting themselves to the commercial field. One of the latter, The Lansden Co., the sole representative of the electric vehicle industry showing at the Palace, also produces a line of pleasure cars. Seven of the makers included among the three-score builders of pleasure cars, however, also construct utility vehicles, and several of them will show commercial applications of their product in one form or another. The gasolene engine will be the dominent feature in the way of the prime movers, the Lans-

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den electric, and the Lane steam cars being notable exceptions to the rule.

The tourist of the show will find 13 cars which are entirely new, which never have been shown at any exhibition of this sort, and which will be of absorbing interest on this account. Moreover there will be no less than 6 cars which, though not strictly new, never have been shown in New York—cars from which the bloom of newness was not rubbed off at the late shows of winter and spring this year. The new models which a large number of makers have added to their line, as well as the various improvements which have been made in those previously introduced, will add to the novelty thus created.

Within the year, considerable attention has been drawn to a sturdy little group of makers who are devoting themselves to the production of automobiles of the buggy type. No less than 6 cars answering to this



BENJAMIN BRISCOE
Chairman A. M. C. M. Association

description will be on view, only one of which has been seen in New York before. One or two will be exhibited for the first time at any show, and all will display points of interest and novelty. Naturally they fall into the same general group as the low priced and universally handy runabout of which there will be another half dozen. A round dozen of light vehicles built by as many makers, all listing at $1,000 or under, thus will furnish ample opportunity for investigation of the type.

Continuing the convenient and expressive price classification, there will be a dozen and two or three exhibits in which will be found cars costing upwards of $1,000, but not more than $2,000. A score of makers will stage cars in the $2,001-$3,000 group, and about an equal number, machines ranging in price from $3,001 to $4,000. At least a dozen types of the more impressive sort of car will be staged also, for which, owing either to elaborate body designs, or unusually complete and expensive mechanisms, prices will be asked exceeding the last named figure. The contingent of utility vehicles will display a like variety of cost, the prices ranging from $800 to $6,500, for the types staged.

Plenty of interest centers in the growth of the six-cylinder movement. Fourteen makers will be on hand with sextuple engined machines, two of whom have espoused the six-cylinder cause to the exclusion of all others. Four-cylinder machines will predominate, as heretofore, but twin motors will be strongly in evidence among cars of the lighter and lower priced class, while there will be two or three single cylinder machines, and one three-cylinder—the latter staged by one of the three makers showing two-cycle engines.

THE VEHICLES IN EVIDENCE.

Automobiles.

Acme	Imperial
A. K.	Jackson
American	Kisselkar
American Mors	Klibinger
Anderson	Klink
Atlas	Lane
Austin	Lambert
Brush	Marion
Cameron	Marmon
Cartercar	Maxwell-Briscoe
Carter	Mitchell
Chadwick	Moline
Cleveland	Moon
Colt	Mora
Compound	Napier
Continental	National
Crawford	Overland
De Luxe	Pennsylvania
Dorris	Premier
Dragon	Quinby
Ellsworth	Rainier
Fraver-Miller	Reo
Ford	Reliable-Dayton
Gaeth	Smith
Garford	Schacht
Gearless	Stoddard-Dayton
Glide	Welch
Hartford	Wayne (Detroit)
Hatfield	Wayne (Richmond)
Holsman	York Pullman

Commercial Vehicles.

Lansden	Rapid
Logan	Reliance
Mack	

Motor Bicycles.

Reading Standard	Ovington F. N.

It is practically certain that the Ford line for 1908, including the $1,000 taxicab, as described in last week's Motor World, will prove as much of a sensation as was furnished a year ago by the appearance of the four-cylinder runabout which since has become so distinguished. Another striking vehicle in the category of the sensational, will be the Brush runabout, seen for the first time at any New York show. Similarly the brand new Maxwell touring car of 26 horsepower, selling at $1,750, will be sure of attracting attention, while the Colt, Marion and York-Pullman runabouts of the six-cylinder sort, each selling at something less than $2,800, are not likely to be ignored by the interested visitor.

Features of noteworthy importance in the cars which are new to the show may be characterized very briefly, as follows: In the Continental is a quadruple braking system which may be actuated individually or collectively, and which acts at once upon the driving shaft at both ends of the change gear, and upon double drums on the rear wheels, large surfaces being utilized in each case; a special form of large diameter multiple disc clutch, having five working members fitted with cork inserts; and special interlocking joints in the steering connection. The Garford, which though absolutely new, is the product of long experience in car building, has a form of rear axle construction which is worth investigating; employs both progressive and selective change gears on its two chassis models, according to duty classification, thus bringing out a novel distinction between the requirements of the operating mechanism in this respect. The double heating of the carburetter, by jacketing and by preheating the air, also is



ALFRED REEVES
Manager A. M. C. M. Association

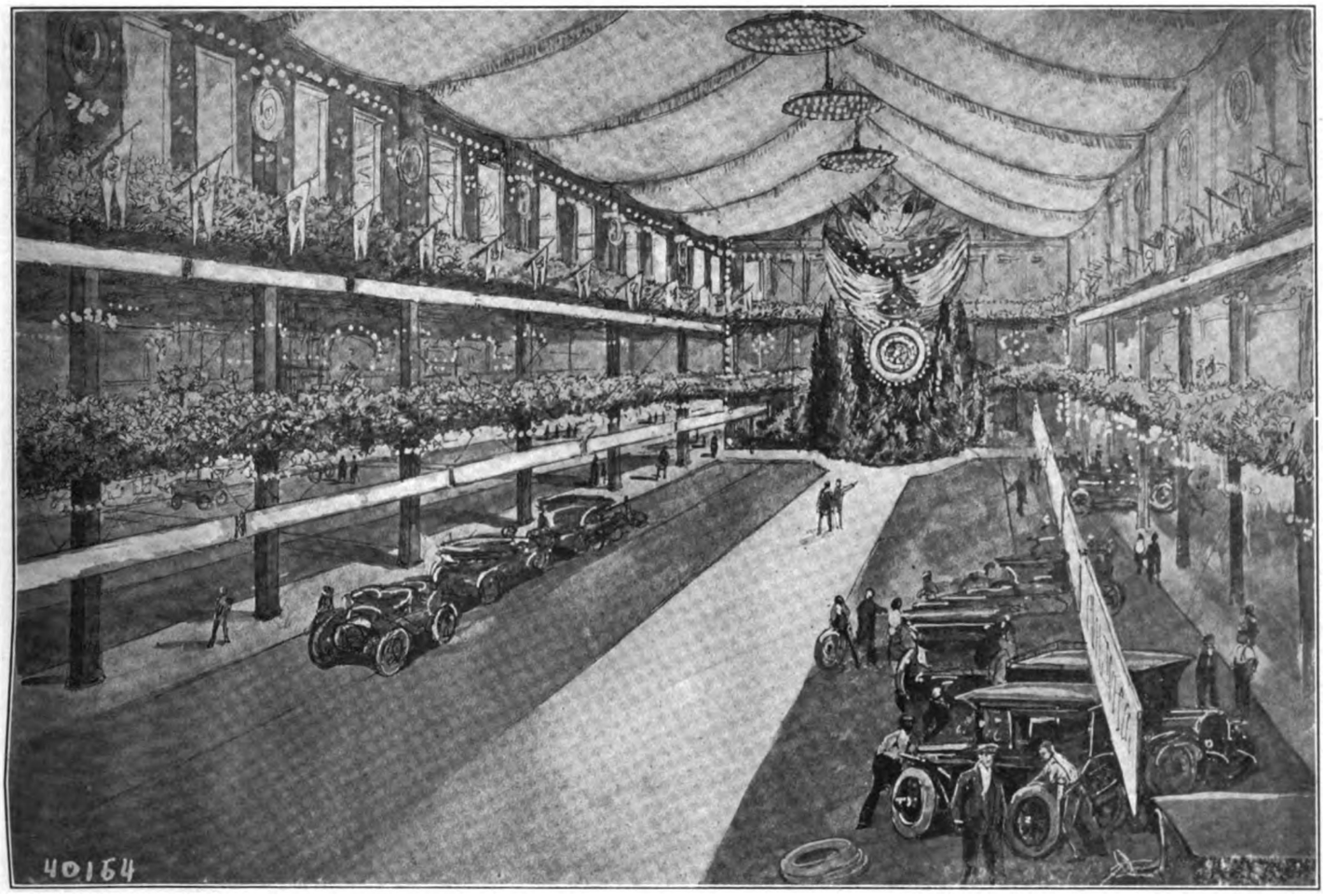
of interest. Similarly, the "Second Imperial," which is the first of its name to be shown publicly, embodies a special double drop frame construction, which serves to lower the chassis very materially, bringing down the center of gravity, and at the same time permitting the use of a perfectly aligned transmission gear.

The Ellsworth, also a brand new product, is a "special steel" car throughout. Among other things, its ball bearing crank shaft, which is of built-up construction, as well as its conoidal coil master clutch, are both novel and exclusive. The Colt Runabout already has been mentioned. Its light weight construction is an achievement worthy of notice. The Allen-Kingston, while not radical in any way, is yet an all-new car, and in the runabout form, mounts a convertible body seating two, three, or four passengers according to circumstances.

Although not new, the Gearless line, which has not been shown in New York before, possesses a number of special feat-

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ures, among them a planetary friction change speed gearing, which is best characterized as a toothless planetary system; the four and six cylinder four-cycle types of motor, and the four cylinder two-cycle type, each of which is fitted to one of the three principle cars of the series. The low tension make and break ignition system employed on the Gaeth touring car, as well as its original type of constricting band master clutch, are points which serve to differ-



THE AUTUMNAL SETTING FOR THE SHOW

entiate it from many of the other cars on view. The Kisselkar, and the Richmond, both new comers at the Palace, are of the class of light touring cars, each of which presents several points of distinction.

Among the builders of motor buggies, the Holsman Automobile Co., alone has exhibited in the East before. The Holsman cars are driven by a newly designed motor this year, which is of improved form in the matter of suspension in the frame. They also have a new transmission in the form of a protected chain system instead of the simple cable formerly used. The Anderson, Hatfield, Kiblinger, Schacht and Reliable-Dayton lines, all show considerable originality, especially the latter, which has been entirely redesigned, and incorporates a novel form of change gear and counter shaft construction. Under this name also will be shown for the first time a light delivery wagon.

New models added to lines already familiar to the show goer, will be found in many instances, and of these, several will mount six-cylinder engines. This is true of the Mora; both the "Racytype" and "Tourer" answer to this description and are entirely new. They present among other features, a high ratio of power to weight, dust and mud proof mechanisms, double ignition, and annular ball bearings in the engines. The latter are of the same cylinder dimensions as the four cylinder motors of last year and this. A noteworthy feature of Mora, 1908 construction is the use of full platform springs in the rear of the chassis. This is found on the Tourer only, the Racytype model having three-quarter elliptic springs in the rear. The Marion Flyer, also will be shown in six as well as four cylinder form. The makers of the Chadwick Great Six, on the other hand, have permanently abandoned efforts at other types of construction and present the sextuple machine only, but in touring and runabout forms. The chassis is of massive, chain-driven construction, the driving chains being fully enclosed in an aluminum housing, which is exclusive, and unique in several ways.

The National line will include two six-cylinder models instead of one, as formerly, Model T, being supplemented by the addition of Model R. The latter has a very compact engine in which, for the sake of space economy among other reasons, but four annular bearings are employed on the crank shaft, instead of seven, as in the larger model. A number of special refinements added to this new motor combine to make it especially free from vibration. A second newcomer in the National group—which incidentally comprises four separate chassis to which various types of body may be applied—is known as Model K, and is a four-cylinder car intended to satisfy the demand for a lower price than is asked for either of the other types. Another machine, which takes on new strength by the addition of both six and four cylinder models, is the York-Pullman. The "4-40" and "6-30" are entirely new, while the Model H car, a 20 horsepower light touring car, replaces a model of somewhat similar characteristics made last year.

New four cylinder models will be still more in evidence than the sixes, however, and among the more noteworthy will be found the new Marmon water-cooled car, which in addition to its motor, is newly designed, and which also is a new departure for its makers, who thus are reaching out

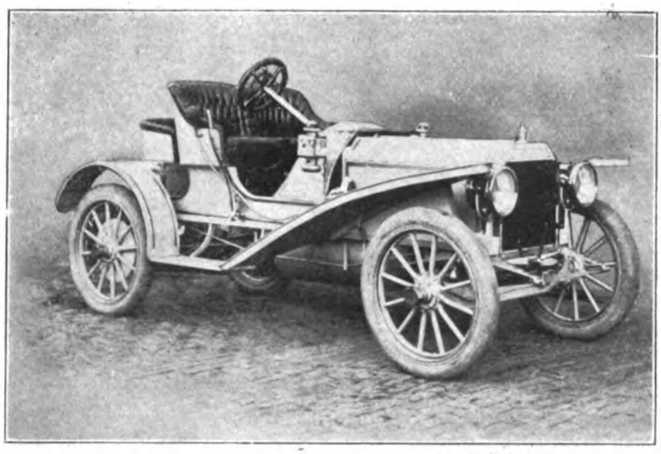
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from a stable position in the air-cooled realm to increase their hold on the public. The Ford and Maxwell innovations already have been mentioned. The latter comprises a machine possessing all the characterictics of a high priced car, but made to sell at a moderate price. Its features may be summed up thus: Motor, with 4¼ by 4½ inch cylinders, 19 disc clutch; three speed progressive sliding change gear; double-chine also, has its change gear group mounted on the rear axle.

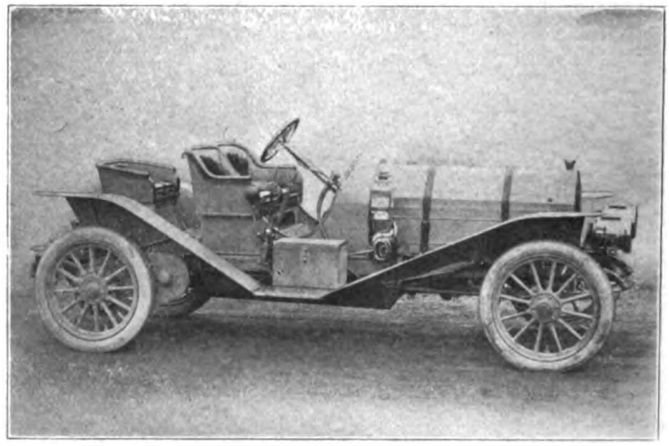
Almost as a matter of course, where makers have not produced runabouts in addition to their touring cars hitherto, they are doing so now. Several new comers are thus to be found which mechanically are close counterparts of well-tried types. The new Reo Model C is a good example of this class. Another is the Great Smith.

their own plant, and has been altered considerably as an incident to the new method of production. The Rainier, which is similarly situated this year, for the first time, has a new motor among other changes in its makeup. The new power plants in these machines do not embody such radical departures from precedent, however, as are found in the case of the Stoddard-Dayton, which now appears with valves mounted in

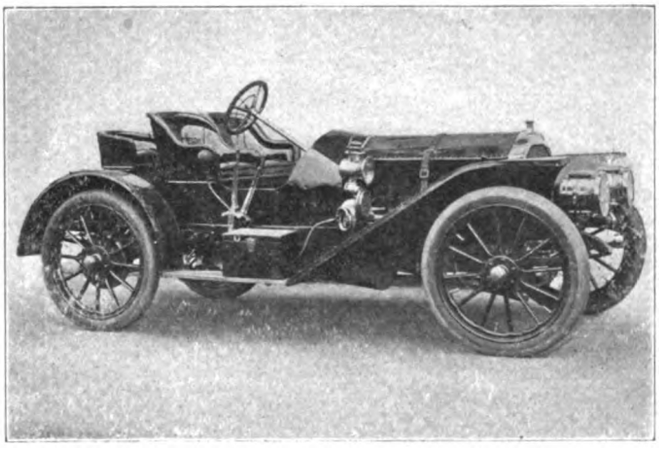
Four New Models from Old Makers.



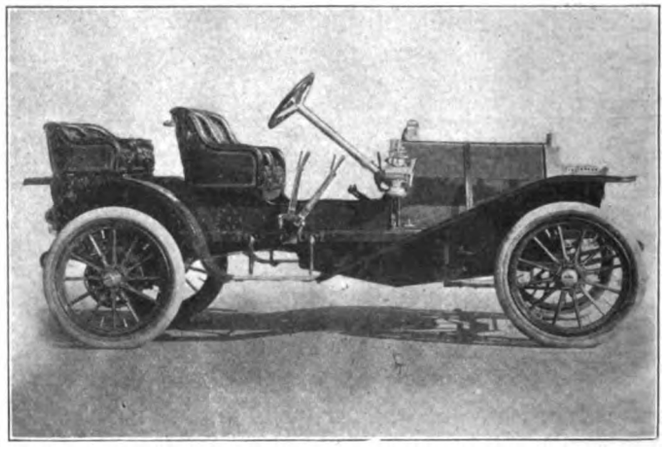
GREAT SMITH



CHADWICK



YORK-PULLMAN



MARION

jointed cardan drive; pressed steel frame; semi-elliptical springs; sheet metal body. The thermosyphon cooling system, which is a Maxwell feature, as well as the Maxwell carburetter, of course are in evidence.

The Pennsylvania Model C, which is entirely new at this time, has been described in these columns recently. Its most striking feature perhaps, is the rear axle construction. The moving parts are housed in manganese bronze, the single casting also enclosing the change-gear group, being entirely self-contained and very compact. Another newly designed model is the Wayne Thirty, which supersedes Model N, of last year, and with its runabout equivalent is the only model produced under that standard at the present time. This ma-

Success in the development of the two-cycle line, has encouraged the makers of the Atlas, which up to this time, has been known only as a light runabout, to enlarge upon their product. Accordingly a new three cylinder type has been added, which is in runabout form with rumble seats for two passengers in the rear, in addition to which is a natty light touring car seating five passengers and having a four-cylinder motor. In both of the new cars, the motors possess the same general characteristics as that of the lighter machine, except for the difference in the number of cylinders.

New motors have been adopted by several makers, as for instance, the builders of the Cleveland car, which is now produced at

the head, instead of oppositely at the sides of the cylinders, and with a new type of continuous feed lubricating system adapted to very nice regulation. In the case of the Marmon air cooled motor, described recently in the Motor World, the adoption of two-piece cylinders, with the valves seating directly in the removeable heads, whereby a number of gains are made, constitutes one of the most noteworthy motor improvements discoverable.

Generally speaking, however, the changes in motor construction will prove hard to find, though none the less important in so far as the running of the motor is concerned. Thus the Mitchell motors have slightly larger cam shafts than last year, while the width of the cam face also has

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been increased. By enlarging the diameter of the two-to-one gears, it has been found possible to do away with the idle gear formerly employed, incidentally reducing the amount of noise made by the machine to a very considerable extent.

Clutches, generally speaking, reveal small alteration, except, as in the case of the Cleveland and one or two other cars, where the use of the multiple disc has come to supplant the plane cone type. Change gear systems also prove ameanable to less and less alteration as time goes on, it would seem. The Atlas runabout is now equipped with a planetary gear having hardened bearings, and produced entirely in the home shop. In the case of the Great Smith car, roller bearings have been supplied, instead of plain bushings, for the lay shaft. In the Cleveland, a selective gear has been substituted for the former progressive type, its special feature being the use of a fourth speed which is "stepped up" higher than the engine speed.

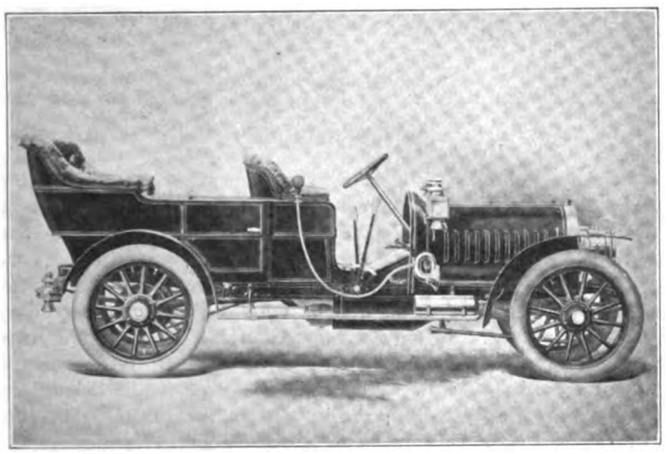
Driving shaft and axle construction is modified in a few instances, as in the case of the Mitchell line, in which the universal joints on the cardan shafts are now completely housed, while the I-beam front axles have been dropped more than formerly in order to permit the lowering of the frame a couple of inches. Occasionally it will be found that the type of the front axle has been changed, as in the case of the Stoddard-Dayton cars, in which the I-beam type is now used exclusively.

A curious example of the tendency to increase wheel sizes is to be found in the case of the Great Smith car. Thirty-four inch wheels are mounted on the touring car which is an improved form of last year's car, while the new runabout has 36-inch wheels. Increases in wheel base are found on numerous cars, frequently including the entire line, or what amounts to the same thing, as in the case of the 1908 Stoddard-Daytons, the Mitchells, which now have 92 and 112-inch bases instead of 90 and 108, as during the present season. The Reo cars are mounted on 32-inch wheels, carrying 3½-inch tires this season, instead of 30 by 3-inch equipments, as heretofore, the result being among other things, a gain of 2 inches in road clearance. A number of cars of the high-grade type, such as the Cleveland and Rainier, already mentioned, are shod with 36-inch tires, instead of the smaller sizes formerly employed.

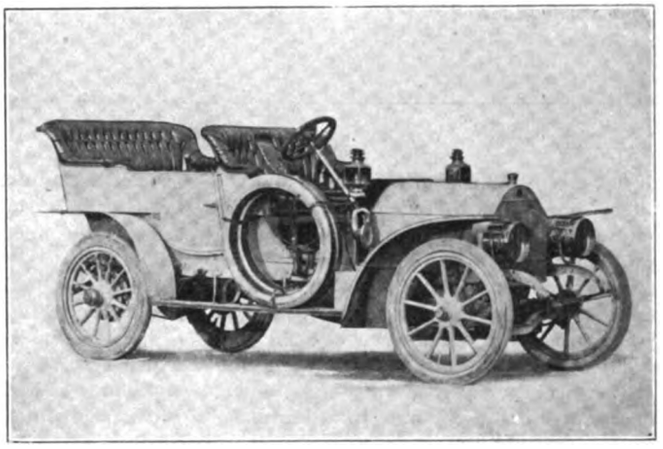
The tendency to increase the braking area of all cars is well illustrated in the case of several of the cars under discussion. The Mitchell touring car, for example, now has 14-inch drums instead of 10½-inch, as hitherto. Also the fact that all the brakes are now mounted on the rear wheels is expressive of a tendency that will be found to be pretty general. In the case of the Reo touring car, added braking strength has been gained by installing an emergency brake on the rear wheels in addition to the equipment previously used. On the Rainier, also, all brakes are now mounted on the rear wheels, working on pressed steel drums instead of castings.

Frequently it will be observed that the motor controlling levers have been removed from their former positions and now appear on the steering wheel, working over sectors of the ratchet type. This is true of the Great Smith, Wayne and Reo cars. Another way in which considerable alteration in the appearance as well as the construction of the machines has been brought about, will be found to lie in the use of im-

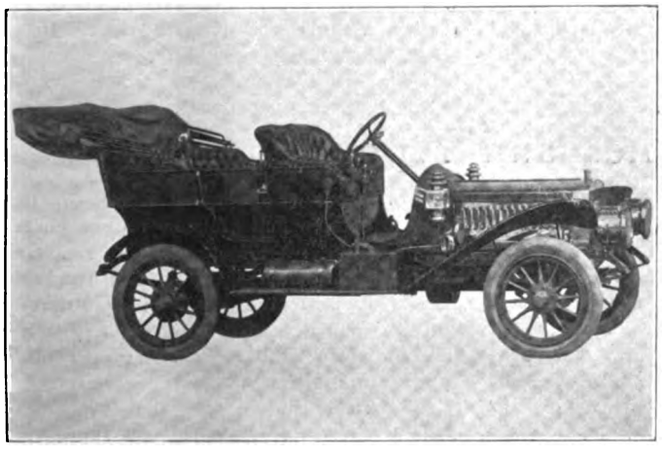
Four of the Big Runabouts that Will Make Their Debuts.



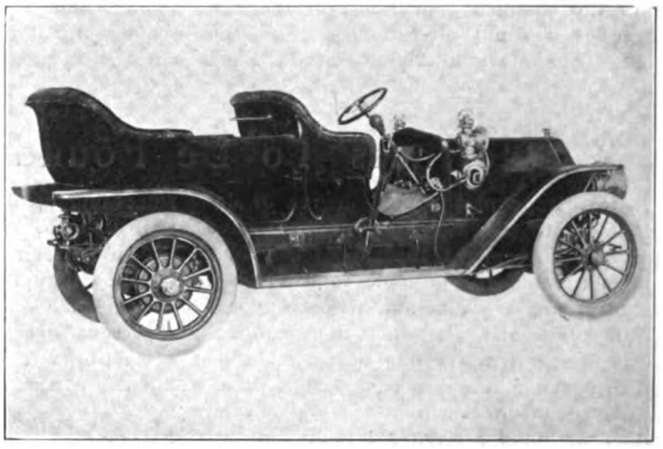
RAINIER



CLEVELAND

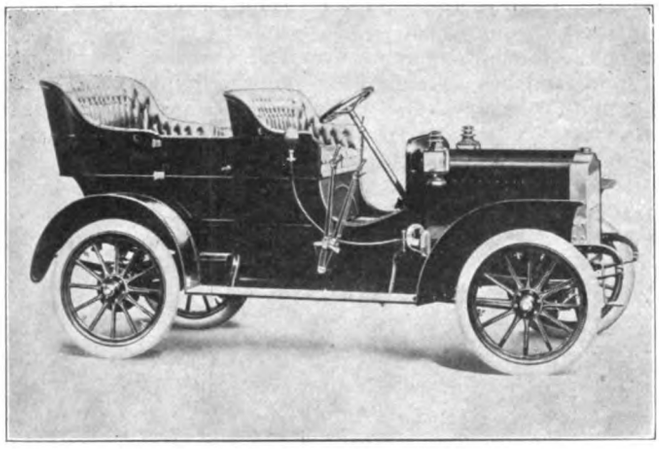


MITCHELL

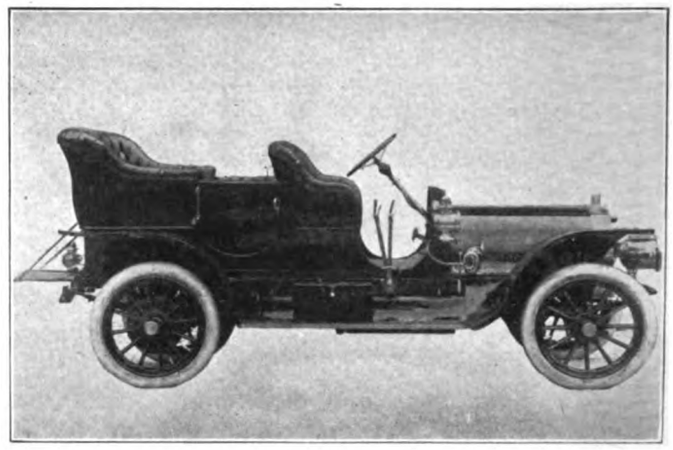


WATER COOLED MARMON

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THE $1750 MAXWELL



THE $3500 NATIONAL

proved types of mud guards. These and the running boards now receive considerable attention from the designer, and with profit, Changes which will be remarked in this respect, apply to the Maxwell, Wayne, Reo, and Moline lines. Further improvement in the appearance of the Moline two-cylinder car having been secured by the adoption of an entirely new type of hood, which, with the new body, combine to alter its aspect very materially.

Changes in body design are difficult to describe, but nevertheless, contribute greatly to the changed appearance of the car, where even slight alterations have been made. The Marmon, Great Smith, and Stoddard-Dayton, bodies, for instance, have been made more comfortable by the lowering of the tonneau seats. Others have been similarly altered. A new departure in the way of electives offered to the prospective purchaser, is that presented by the makers of the National car, the various types of which may be had with either cast or sheet aluminum bodies. The variety of this comprehensive line is still further extended by the option of two types of radiator and hood, namely the familiar "round radiator" which has become so well known to the public, and a new rectangular pattern, which, with its hood, presents a very novel as well as pleasing appearance.

For the first time, the names Rambler and American Berliet will be missing from the Palace show. In both cases the inadequacy of the show space allotments received by the respective makers, accounts for the hiatus which cannot fail to be remarked. The American Locomotive Automobile Co., and Thomas B. Jeffery & Co., however, have no lack of "show spirit," and consequently will hold exhibitions of their own during show week. The Berliet cars will be on view at the Waldorf-Astoria hotel, and the new Rambler line in its entirety will be displayed in the warerooms of Homan & Schulz, the New York agents, at 38-40 West Sixty-second street.

Newness To Be Found In Tires and Appurtenances

Notwithstanding the high degree of development to which automobile tires have already been brought, thus apparently limiting the room for possible improvement, the surprising array of new tires to appear at the Show indicates that the manufacturers are far from resting on their laurels and are giving every encouragement to inventive genius. Special tires for special service are also receiving a degree of attention heretofore unthought of, but bearing evidence of the diligent co-operation of the tire manufacturers in making the automobile a perfect vehicle. While considerable daring of design is shown in the new offerings, the experience and reputation of the firm whose names they bear is an assurance that the new products do not belong to the freak classes of earlier days, but represent true advance in the art. They also make it evident that the industry has not reached a stage of smug self-satisfaction which would be calculated to discourage progress toward perfection.

The Firestone Tire & Rubber Co., of Akron, O., will disclose the 1908 Firestone dual, non-skid tread for pneumatic tires, which by its ingenious construction is calculated to afford protection against skidding. The 1908 Firestone dismountable rim will likewise be shown; the company also has something up its sleeve, which may be revealed during the week. A new "cellular" tire and a self-healing pneumatic tire will be shown by the Swinehart Clincher Tire & Rubber Co., of Akron. Both of these represent decided departures from usual tire design. The new Motz non-skid cushion tire of the Motz Clincher Tire & Rubber Co., Akron, will make its first show appearance.

By reason of the fact that an American plant for the manufacture of Michelin tires has been started at Milltown, N. J., considerable interest attaches to the 1908 product offered by the Michelin Tire Co., of which, first and foremost will be the new "compressed tread" clincher type tire, exhibited for the first time in America. The design of this tire is such as to compress the tread from the two sides, so that if the tread be scarred or cut the action of the air pressure will be to close the wound rather than to open it with pressure from behind. Sections of the new tire are shown and the action of the air pressure in compressing instead of expanding the tread, is explained.

The exhibit of the Diamond Rubber Co., of Akron, in addition to showing the "stand pat" wrapped tread products and the Marsh quick acting clincher rim, will also contain the new Diamond "Electric" tire, a special tire of great resiliency for use on light electric cars, which aims to reduce current consumption by absorbing the resistance offered by obstacles or uneven road surfaces. A perfected form of demountable rim also will be shown together with a new line of white rubber solid tires for buggy type automobiles.

Ajax tires, shown by the Ajax-Grieb Rubber Co., of New York, will represent a different method of building from last year, wrapped tread construction being used, while Morgan & Wright, of Detroit, will have a new quick detachable clincher tire, as has the Hartford Rubber Works Co., of Hartford. Both these concerns exhibit the new Midgley rim, which has been so thoroughly exploited by advertising as already to seem old, although it is but making its first appearance at a show. The rim is also demonstrated at the booth of the Midgley Mfg. Co., Columbus, O., its makers. Another new rim to make its bow is the Parker rim, invented by Orrel A. Parker, president of the Newmastic Tire Co., of New York, in whose space it will be shown. The outer half is removable and the distance between the clinchers may be varied. It was originally designed to expedite the application of tires filled with Newmastic compound instead of air, but will be offered for

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regular clincher tires as well. Complete Newmastic-filled single tube tires also will be presented for sale. Leather tubes and metal armored casings of new design will be exhibited for the first time by the Leather Tire Goods Co., of Newton Upper Falls, Mass. The J. H. Sager Co., of Rochester, N. Y., branches out from the equalizing spring field to include the manufacture of something new in tire grips. The electric vulcanizers of the C. A. Shaler Co., of Waupun, Wis., will have several additions to the line, including a new large model and a special valve stem vulcanizer, designed for use on tires having rubber valve stems.

Developments in Accessories and Parts

New things have a special claim for attention because they constitute one of the chief grounds for holding a show and are what the average person wants to know about. It follows that in the 190 exhibits of parts and accessories much that is new and interesting will be found. For not only is that field still fertile with ingenuity and invention, but it more readily lends itself to show demonstrations, of which full advantage will be taken by not a few exhibitors. In addition to well informed salesmen and demonstrators, the performance given for the entertainment and edification of the visitor includes the appearance of a knight in full armor, a hive of bees, the pleasant smiles of Hebe White—a young lady who is in rivalry with Phoebe Snow for keeping clean on long tours, several Teddy bears, workmen making batteries, miniature automobiles on a rolling roadway, flashing electrical displays, a school day blackboard, and demonstration devices that convey a lesson to the most uninitiated in matters mechanical.

Speed indicators with new names are not so numerous as at former shows, the majority of those shown being devices already known to the public, but with such detail improvements as the past season has shown to be possible. An entirely new instrument of this class, however, will be shown by the Jones Speedometer Co., of New York, in what is termed an automatic speed control governor. It makes it possible for the man in the tonneau or limousine of a car to prevent the chauffeur or driver from exceeding any predetermined maximum rate of speed, by simply setting the lever, after which the instruments works automatically. If the chauffeur is driving alone, he may set the instrument himself and be sure that he will not go over whatever maximum the device is arranged to permit. A new Jones speedometer at the low price of $25, complete with season mileage odometer, and known as Model 22, is a mild sensation offered by the same company to supplement the several more expensive models. Another speed instrument which makes its first appearance at the Show is the Phelps vehicle recorder, which will be exhibited by Wm. S. Jones, of Philadelphia. The recorder keeps a graphic record of speed, mileage and duration of stops and may be applied to almost any sort of vehicle.

An optical demonstration of the efficacy of shock absorbers will be given by the Hartford Suspension Co., of New York, by means of two small motor cars on a moving roadway, one without shock absorbers and the other equipped with them. The road is very rough and the workings of the demonstration will give a very convincing idea of the effect of shock absorbers in smoothing out ordinary road shocks. The Hartford-Truffault shock absorbers have a new feature for 1908 in a dial arrangement which enables the user to determine the proper friction tension for whatever car to which they may be applied, and to make the tension correct for all four devices in a set. The Hotchkin Mfg. Co., of Chicago, will offer a new model of the Hotchkin anti-jolt device and will enlist the services of a Teddy bear in showing its virtues, little Bruin being subjected to many severe bumps when the device is taken off ,but having a comfortable time when it is on. The new model of the Diezemann shock absorber will be displayed by the Diezemann Shock Absorber Co., of Hoboken, N. J. While the same in principle as previous models, it is quite different in form, its various new features being explained with the assistance of unassembled parts.

Ignition has received a great deal of attention and a variety of new and improved devices will be in evidence. The Splitdorf Laboratory, of New York, will feature a synchronized distributing coil, which while using an individual coil unit for each cylinder, is designed to give perfect and uniform timing throughout a multi-cylinder motor. What is described by the K-W Ignition Co., of Cleveland, as an "entirely new ignition system" is shown by that concern, together with the new, improved K-W plug and a new line of engine speed magnetos. Importations from Europe in the magneto line that are radically new, constitute the exhibit of Lavalette & Co., of New York.

Simplicity is the feature of a new high tension magneto which will be presented by the Remy Electric Co., of Anderson, Ind., in which no coil is used and only one shaft. New types of timers, distributors and magneto switches will be staged by the Connecticut Telephone & Electric Co., of Meriden, Conn., together with a new dial adjusting screw on coils, by which the coils may be adjusted without the use of an indicator, while the Witherbee Igniter Co., of New York will blossom out with a full line of ignition specialties bearing the name "Wico" and including a departure in the roller type of timers, which by the employment of a loose ring gives large contact surfaces. Plug switches and spark plugs also will be shown, together with the new coils equipped with porcelain tops and having special accessibility features. A "human interest" exhibit in the booth will be a bee hive in the form of a Witherbee battery and filled with live honey bees, to impress the "with-a-bee" name. Those who like to see how dry cells are made will have only to watch the workmen in the exhibit of the Crown Battery Co., of New York, where Crown batteries are shown to the automobile trade for the first time. Geiszler Brothers, of New York, claim high non-sulphation qualities for the new accumulators which they show.

For the first time the much discussed feature of variable shading of the light from acetylene lamps takes concrete form in an exhibit at an American show. The Badger Brass Mfg. Co., of Kenosha, Wis., and New York City, will exploit the Solar lamps equipped with the Besnard shutter system, by means of which the blinding glare from the headlights may be toned down as much as desired in an instant, from the seat. Several new lamps also will be shown by other exhibitors, but the majority of these are detail alterations in style.

The parts makers will have new things to show, too. In exhibiting at this time they will hope to make converts before the actual rush of manufacturing commences and to have their products impressed upon the minds of the designers in case new models are later brought out. The Timken Roller Bearing Axle Co., of Canton, O., will present a front axle with Timken roller bearings in the knuckle head, for which many virtues are claimed. The axle is of the I beam type and is for use on pleasure cars up to 3,400 pounds. The same company will also show a rear axle embodying the new Hedgeland equalizer in its newest form of application, thus doing away with the usual differential gearing. New forms of Timken hubs for heavy trucking will also be shown. The American & British Mfg. Co., Bridgeport, Conn., plans to exhibit the famous Herreshoff 40 horsepower "1908" motor designed like the power plant of the record breaking racing boat "Den" but which is suitable for motor cars. In chains there are to be obvious improvements shown. The Diamond Chain & Mfg. Co., of Indianapolis, Ind., will present two new styles of chain. The first will be distinguished by the use of chrome nickel steel for the side bars, which will make it possible to use side bars scarcely half as heavy as those ordinarily used and thus lightening the whole chain considerably. The second of the new styles that will make their initial bow will be a "built-up" block chain, similar in ap-

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pearance to a roller chain, but with hardened steel bushings on the rivets to take the place of the rollers. The Whitney Mfg. Co., Hartford, Conn., will also show driving chains for 1908 made by improved processes, now possible because of an immense new factory. To make plain to everybody the advantages of a new bearing containing two rows of balls, the New Departure Mfg. Co., of Bristol, Conn., intends to install a testing machine which will subject the bearing in question to severe radial load and end thrust tests. Both the practical and theoretical advantages of the new type of bearing will be given complete exposition. Inexpensive tank gages and a line of brass specialties will be among the new things to be exhibited by the Hancock Mfg. Co., of Charlotte, Mich. The Gemmer Manufacturing Co., of Detroit, Mich., will offer a new ball bearing gear system, in addition to improved forms of previous types. The Worcester Pressed Steel Co., will have no demonstrators or salesmen in charge of its exhibits but will depend upon specimens of "autogenous welding," displayed in cabinets, to call attention to its work. Oxygen and acetylene are used in a blow pipe flame for this new process, and interesting results will be shown.

The latest model of Columbia lock nuts will interest the mechanically inclined visitor at the exhibit of the Columbia Nut & Bolt Co., of Bridgeport, Conn. Manufacturers and garage repairmen will be appealed to at the exhibit of the Clover Mfg. Co., of New York, The concern will demonstrate the rapidity with which cylinders and bearings may be ground by the use of Clover compound, a new preparation for automobile use. A novelty in the way of a tubular steel automobile steering wheel will be shown by the Standard Welding Co., of Cleveland, in addition to its regular exhibits. The wheel will be copper plated, galvanized, nickel plated and buffed. The Hill Mfg. Co., Buffalo, N. Y., is making plans to exhibit a new, revolving auxiliary chair seat which will have fold-up qualities and compactness to recommend it. The company also intends to show an entirely new wind shield, which while folding over and having the glass in two pieces, will have no frame in the middle of the glass which might obstruct the view. The edges will match so closely as to make the shield like one piece.

The knight in full armor will preside at the booth of the Travelers Insurance Co., of Hartford, Conn., his habiliment standing as a symbol of the protection afforded by an insurance policy Miss Hebe White, the keep-clean girl, is subsidized by a non-fluid oil concern, and will hand out a booklet of her experiences on a long automobile tour.

Free education in automobile matters will be offered in tabloid doses to visitors at the exhibit of the New York School of Automobile Engineers. If any one be confused as to the difference between a planetary and a sliding gear transmission, a torsion and a strut rod, high tension or low tension ignition, or between a cardan and a universal joint, all he has to do is to go to the School space and have it explained to him. In fact the school proposes to maintain a free information bureau for the public, to go into the mysteries of two-cycle and four-cycle motors, or progressive and selective change gears and to make clear anything that may puzzle the non-technical. To assist in this worthy cause a vast array of apparatus will be installed. The exhibit will contain among other things a four cylinder, four cycle motor thoroughly sectionalized and equipped with a sectionalized carburetter and muffler and arranged for the attachment of high tension ignition by four coils and a timer, by one coil and a distributor, and by high tension magneto. With this engine demonstrations will be given in valve setting, ignition wiring, carburetter adjustment and engine faults. The exhibit will also include transmissions, a sectionalized rear axle showing shaft drive arrangement, apparatus illustrating steering principles, sectionalized spur and bevel gears, a dismounted differential, secondary coils, make and break ignition outfits and a library of charts, together with a blackboard. The exhibit will be in charge of men who agree to answer any technical questions, a promise so rash as to be startling in its nature.

The Exhibitors, Their Exhibits and Their Locations

Automobiles.

Anderson Carriage Co., Detroit, Mich., first gallery, 136—Anderson gasolene cars.

Abendroth & Root Mfg. Co., Newburgh, N. Y., main floor, 24—Frontenac gasolene cars.

Acme Motor Car Co., Reading, Pa., main floor, 39—Acme gasolene cars.

Allen-Kingston Motor Car Co., Kingston, N. Y., main floor, 2—Allen-Kingston gasolene cars.

American Motor Car Co., Indianapolis, Ind., main floor, 6—American gasolene cars.

Atlas Motor Car Co., Springfield, Mass., main floor, 30—Atlas gasolene cars.

Austin Automobile Co., Grand Rapids, Mich., main floor, 5—Austin gasolene cars.

Bartholomew Co., Peoria, Ill., main floor, 9—Glide gasolene cars.

Brush Runabout Co., Detroit, Mich., main floor, 34—Brush gasolene cars.

Buckeye Mfg. Co., Anderson, Ind., main floor, 27—Lambert gasolene cars.

Cameron Car Co., Brockton, Mass., first gallery, 223—Cameron gasolene cars.

Carter Motor Car Corporation, Washington, D. C., first gallery, 228—Carter gasolene cars.

Chadwick Engineering Works, Philadelphia, Pa., main floor, 25—Chadwick Great Six gasolene cars.

Cleveland Motor Car Co., Cleveland, O., main floor, 47—Cleveland gasolene cars.

Colt Runabout Co., New York City, main floor, 43—Colt gasolene cars.

Compound Cars, Middletown, Conn., main floor, 50—Compound cars.

Continental Auto Mfg. Co., New Haven, Conn., main floor, 3—Continental gasolene cars.

Crawford Automobile Co., Hagerstown, Md., main floor, 38—Crawford gasolene cars.

Dayton Motor Car Co., Dayton, Ohio, main floor, 14—Stoddard-Dayton gasolene cars.

De Luxe Motor Car Co., Detroit, Mich., main floor, 49—De Luxe gasolene cars.

Dorris Motor Car Co., St. Louis, Mo., main floor, 23—Dorris gasolene cars.

Dragon Automobile Co., Philadelphia, Pa., main floor, 61—Dragon gasolene cars.

Ellsworth, J. M., New York City, first gallery, 222—Ellsworth gasolene cars.

Ford Motor Co., Detroit, Mich., main floor, 15—Ford gasolene cars.

Gaeth Automobile Works, Cleveland, O., main floor, 29—Gaeth gasolene cars.

Garford Motor Car Co., New York City, main floor, 46—Garford gasolene cars.

Gearless Transmission Co., Rochester, N. Y., main floor, 28—Gearless cars.

Hatfield Motor Vehicle Co., Miamsburg, O., first gallery, 221—Hatfield gasolene cars.

Holsman Automobile Co., Chicago, Ill., first gallery, 226—Holsman gasolene cars.

Imperial Motor Car Co., Williamsport, Pa., main floor, 37—Second Imperial gasolene cars.

Jackson Automobile Co., Jackson, Mich., main floor 22—Jackson gasolene cars.

Kiblinger Co., W. H., Auburn, Ind., first gallery, 214—Kiblinger gasolene cars.

Kissell Motor Car Co., Hartford, Wis., main floor, 41—Kissellkar gasolene cars.

Klink Motor Car Mfg. Co., Dansville, N. Y., main floor, 45—Klink gasolene cars.

Lane Motor Vehicle Co., Poughkeepsie, N. Y., main floor, 40—Lane steam cars.

Lear Automobile Co., Oscar, Springfield, O., main floor, 51—Frayer-Miller gasolene cars.

Lansden Co., The, Newark, N. J., first gallery, 212—Lansden electric cars.

Logan Construction Co., The, Chillicothe, O., first gallery, 208—Logan gasolene cars.

Marion Motor Car Co., Indianapolis, Ind., main floor, 35—Marion Flyer gasolene cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y., main floor, 12—Maxwell gasolene cars.

Mitchell Motor Car Co., Racine, Wis., main floor, 13—Mitchell gasolene cars.

Moline Automobile Co., East Moline, Il., main floor. 19—Moline gasoline cars.

Moon Motor Car Co., St. Louis, Mo., main floor, 26—Moon gasolene cars.

Mora Motor Car Co., Rochester, N. Y., main floor, 21—Mora gasolene cars.

Motorcar Co., Detroit, Mich., main floor, 7—Cartercar gasolene cars.

Mack Bros. Motor Car Co., Allentown, Pa., first gallery, 206—Manhattan gasolene cars.

Napier Motor Co. of America, Boston, Mass., main floor, 33—American Napier gasolene cars.

National Motor Vehicle Co., Indianapolis, Ind., main floor, 18—National gasolene cars.

Nordyke & Marmon Co., Indianapolis, Ind., main floor, 20—Marmon gasolene cars.

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Overland Automobile Co., Indianapolis, Ind., main floor, 1—Overland gasolene cars.
Ovington Motor Co., New York City, first gallery, 215—F. N. motorcycles.

Pennsylvania Auto Motor Co., Bryn Mawr, Pa., main floor, 4—Pennsylvania gasolene cars.
Premier Motor Mfg. Co., Indianapolis, Ind., main floor, 17—Premier gasolene cars.

Quinby & Co., J. N., Newark, N. J., main floor, 42—Bodies and cars.

Rainier Motor Car Co., New York City, main floor, 48—Rainier gasolene cars.
Rapid Motor Vehicle Co., Pontiac, Mich., first gallery, 209—Rapid gasolene cars.
Reading Standard Co., Reading, Pa., first gallery, 213—R-S motorcycles.
Reliable Dayton Motor Car Co., Chicago, Ill., first gallery, 220—Reliable Dayton gasolene cars.
Reliance Motor Car Co., Detroit, Mich., first gallery, 207—Reliance gasolene cars.
Reo Motor Car Co., Lansing, Mich., main floor, 16—Reo gasolene cars.

St. Louis Car Co., St. Louis, Mo., main floor, 10—American Mors gasolene cars.
Schacht Mfg. Co., The, Cincinnati, O., first gallery, 225—Schacht gasolene cars.
Smith Auto Co., The, Topeka, Kan., main floor, 44—Great Smith gasolene cars.

Wayne Automobile Co., Detroit, Mich., main floor, 11—Wayne gasolene cars.
Wayne Works, Richmond, Ind., first gallery, 224—Richmond gasolene cars.
Welch Motor Car Co., Pontiac, Mich., main floor, 36—Welch gasolene cars.
York Motor Car co., York, Pa., main floor, 32—York Pullman gasolene cars.

Parts and Accessories.

Acetyvone Co., Niagara Falls, N. Y., first gallery, 147—Carbide and lamps.
Ajax-Grieb Rubber Co., New York City, first gallery, 202—Ajax automobile tires.
Allen Auto Specialty Co., New York City, second gallery, 324—Tires jackets and specialties.
American & British Mfg. Co., Bridgeport, Conn., first gallery, 125—Frames, motors, axles and parts.
American Ball Bearing Co., Cleveland, O., first gallery, 159—Ball bearings.
American Electric Novelty & Mfg. Co., New York City, first gallery, 137—Ever Ready batteries, lamps, and tire specialties.
Ampere Mfg. Co., New York City, second gallery, 337—Batteries and ignition specialties.
Atwater-Kent Mfg. Works, Philadelphia, first gallery, 201—Igniters and timers.
Aurora Automatic Machine Co., Aurora, Ill., first gallery, 192—Thor motors and components.
Autocoil Co., Jersey City, N. J., first gallery, 187—Coils and ignition specialties.
Auto Accessories Mfg. Co., Detroit, Mich., first gallery, 123—Tops, tire jackets and specialties.
Auto Improvement Co., New York City, first gallery, 138—Self-starters and specialties.
Auto Igniter Co., New York City, second gallery, 369—Igniters.
Auto Pump Co., Springville, N. Y., first gallery, 168—Pumps and specialties.
Automobile Supply Mfg. Co., Brooklyn, N. Y., second gallery, 347—Horns, tubing and brass specialties.
Auto Spring Repairer Co., New York City, second gallery, 375—Spring repair outfits.
Automobile Utilities Co., Boston, Mass., second gallery, 364.

Badger Brass Mfg. Co., New York City and Kenosha, Wis., first gallery, 111.—Solar lamps and acetylene generators.
Baldwin Chain & Mfg. Co., Worcester, Mass., first gallery, 161—Baldwin chains and recoil check.

Gus Balzer, New York City, second gallery, 326—Lamps, crests and monograms.
S. F. Bowser & Co., Fort Wayne, Ind., first gallery, 126—Gasolene and oil storage outfits.
Breeze Carbureter Co., Newark, N. J., first gallery, 183—Breeze carburetters.
J. S. Bretz Co., New York City, second gallery, 355—Ball bearings and high tension magnetos.
Briscoe Mfg. Co., Detroit, Mich., first gallery, 163—Radiators and fittings.
Brooke Automobile Supply Co., New York City, second gallery, 302—Supplies.
Brown-Lipe Gear Co., Syracuse, N. Y., first gallery, 107—Transmissions, differentials and steering gear.
Brownell-Trebert Co., Rochester, N. Y., second gallery, 316—Motors.
Bureau of Tours, Automobile Club of America, second gallery, 376—Model hotel room for tourists.
Byrne-Kingston & Co., Kokomo, Ind., first gallery, 171—Kingston carburetters.

Clover Mfg. Co., New York City, second gallery, 361—Grinding compound.
Coe's Wrench Co., Worcester Mass., first gallery, 135—Wrenches.
Columbia Nut & Bolt Co., Inc., Bridgeport, Conn., first gallery, 169—Columbia lock nuts.
Commonwealth Rubber Co., Reading, Mass., second gallery, 344—Tires.
Comptoir d'Innovations Automobiles, Paris, second gallery, 351—Tire inflators and French specialties.
Connecticut Telephone & Electric Co., Meriden, Conn., first gallery, 195—Spark coils, switches and ignition specialties.
Consolidated Optical Co., New York City, second gallery, 365—Goggles.
Continental Caoutchouc Co., New York City, first gallery, 211—Continental tires.
Cowles & Co., New Haven, Conn., first gallery, 201A—Accessories.
Cramp & Sons Ship & Engine Building Co., Philadelphia, first gallery, 162—Bronze castings and automobile parts.
Crown Battery Co., New York, second gallery, 314—Dry cells.

W. Smalley Daniels, Boston, Mass., second gallery, 317—Jacks and pumps.
Dayton Electrical Mfg. Co., Dayton, O., first gallery, 157—Igniters and ignition specialties.
J. E. Demar, New York City, second gallery, 332—Detachable rims.
Diamond Chain & Mfg. Co., Indianapolis, Ind., first gallery, 191—Diamond chains.
Diamond Rubber Co., Akron, O., first gallery, 104—Diamond tires.
Diezeman Shock Absorber Co., Hoboken, N. J., first gallery, 143—Shock absorbers.
Jos. Dixon Crucible Co., Jersey City, N. J., first gallery, 175—Graphite lubricants.
C. J. Downing, New York City, second gallery, 301—Supplies.
W. J. Duane & Co., New York City, first gallery, 141—Tops and slip covers.

Eastern Carbon Works, Jersey City, N. J., first gallery, 177—Batteries.
Edmunds & Jones Mfg. Co., Detroit, Mich., first gallery, 184—Lamps and specialties.
Electric Storage Battery Co., Philadelphia, first gallery, 148—Accumulators.
Elite Mfg. Co., Ashland, O., second gallery, 306—Jacks and pumps.
Empire Auto Tire Co., Trenton, N. J., first gallery, 127—Empire tires.

F. R. V. Auto Parts Co., New York City, second gallery, 325—Shock absorbers.
Firestone Tire & Rubber Co., New York City, first gallery, 166—Firestone tires.
Fisk Rubber Co., Chicopee Falls, Mass., first gallery, 110—Fisk tires.

Gabriel Horn Mfg. Co., Cleveland, O., first gallery, 198—Gabriel horns.
Geiszler Bros., New York City, second gallery, 312—Batteries.
Gemmer Mfg. Co., Detroit, Mich., first gallery, 193—Steering gears and parts.
Gilbert Mfg. Co., New Haven, Conn., first gallery, 153—Tire jackets, lamps, covers and rubber cloth specialties.
B. F. Goodrich Co., New York, first gallery, 112—Tires.
Goodyear Tire & Rubber Co., Akron, O., first gallery, 119—Goodyear tires.
G & J Tire Co., Indianapolis, Ind., first gallery, 108—G & J tires.
Gray & Davis, Amesbury, Mass., first gallery, 103—Lamps.
Gray-Hawley Mfg. Co., Detroit, Mich., first gallery, 190—Chime whistles and cut-out mufflers.

C. T. Ham Mfg. Co., Rochester, N. Y., first gallery, 139—Lamps.
Hancock Mfg. Co., Charlotte, Mich., first gallery, 195A—Oilers, tank guages and fittings.
A. W. Harris Oil Co., Providence, R. I., first gallery, 149—Lubricants.
Hartford Rubber Works Co., Hartford, Conn., first gallery, 101—Hartford tires.
Hartford Suspension Co., New York, City, first gallery, 165—Hartford-Truffault shock absorbers.
Hayes Mfg. Co., Detroit, Mich., first gallery, 140—Fenders and fittings.
Hartford Auto Parts Co., Hartford, Conn., first gallery, 150—Universal joints and automobile parts.
Heinze Electric Co., Lowell, Mass., first gallery, 144—Coils and ignition equipment.
Herz & Co., New York City, first gallery, 156—Timers, plugs and ignition specialties.
Hess-Bright Mfg. Co., Philadelphia, first gallery, 173—Bearings.
Hicks Speed Indicator Co., Brooklyn, N. Y., second gallery, 333—Speed indicators.
Hill Mfg. Co., Buffalo, N. Y.second gallery, 338—Oilers.
Hotchkin Mfg. Co., Chicago, Ill., first gallery, 132—Anti-jolt device.
Hyatt Roller Bearing Co., Harrison, N. J., first gallery, 116—Bearings.

Igniter Appliance Co., Cleveland, O., first gallery, 194A—Ignition specialties.
Index Speed Indicator Co., Minneapolis, Minn., first gallery, 145—Index speed indicators.
International Auto Horn Mfg. Co,. New York City, second gallery, 310—Horns.
Jeffery-De Witt Co., Newark, N. J., second gallery, 356—Spark plugs.
Isaac G. Johnson & Co., Spuyten Duyvil, N. Y., second gallery, 348—Forgings and castings.
Jones Speedometer Co., New York City, first gallery, 199—Jones speedometers, annunciators, odometers, speed regulators and specialties.

K-W Ignition Co., Cleveland, O., second gallery, 319—K-W magnetos, master vibrators, plugs, and ignition system.
Julius King Optical Co., New York City, second gallery, 336—Goggles.
Kinsey Mfg. Co., Dayton, O., first gallery, 196—Kinwood automobile parts.
Charles L. Klauder, Philadelphia, second gallery, 313—Special leathers.
Kokomo Electric Co., Kokomo, Ind., first gallery, 170—Ignition specialties.
Richard E. Krause, Cleveland, O., second gallery, 350—Carburetters.

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Lavalette Co., New York, second gallery, 331—Magnetos.

Leather Tire Goods Co., Newton Upper Falls, Mass., first gallery, 130—Non-skid covers and leather inner tubes.

Light Mfg. & Foundry Co., Pottstown, Pa., first gallery, 178—Automobile parts and castings.

Long Mann Co., Rochester, N. Y., second gallery, 352—Tire tools.

Loring Auto Appliance Co., New York City, second gallery, 328—Speed indicators.

Roger B. McMullen, Chicago, Ill., second gallery, 330—Frames, axles and parts.

Leon Mann Co., New York City, second gallery, 353—Automobile clothing.

Manhattan Screw & Stamping Works, New York City, first gallery, 151—Lamps, horns and tire carriers.

John W. Masury & Sons, Brooklyn, second gallery, 371—Varnishes and colors.

Merchant & Evans, Philadelphia, second gallery, 357—Multiple disc clutches and automobile fittings.

Metal Stamping Co., New York City, second gallery, 307—Radiators.

Michelin Tire Co., Milltown, N. J., first gallery, 129—Michelin tires.

Midgeley Mfg. Co., Columbus, O., first gallery, 117—Midgley rims and wheels.

Charles E. Miller, New York City, first gallery, 218—Brampton chains and automobile supplies and accessories of all kinds.

William P. Miller's Sons, Long Island City, second gallery, 325—Lubricants.

Model Mfg. Co., New York City, second gallery, 373—Specialties.

Morgan & Wright, Detroit, Mich., first gallery, 158—Morgan & Wright tires.

Morrison, McIntosh & Co., Grinnell, Ia., second gallery, 334—Gloves and gauntlets.

A. R. Mosler, New York City, first gallery, 185—Spark plugs.

Motor Car Specialty Co., Philadelphia, first gallery, 120—Speed indicators and accessories.

Motz Clincher Tire & Rubber Co., New York City, second gallery, 303—Tires.

Nathan Novelty Co., New York City, second gallery, 345—Covers and protectors.

National Battery Co., New York City, second gallery, 322—Batteries.

National Carbon Co., New York City, first gallery, 115—Batteries.

National Sales Corporation, New York City, second gallery, 374—Accessories.

National Surety Co., New York City, main floor, 57—Liability policies.

Newmastic Tire Co., New York City, second gallery, 205—Compound filled tires.

New York Coil Co., New York City, second gallery, 368—Coils.

N. Y. & N. J. Lubricant Co., New York City, first gallery, 164—Lubricants.

N. Y. School of Automobile Engineers, New York City, second gallery, 311—Examples of pupils' work.

N. Y. Sporting Goods Co., New York City, second gallery, 360—Accessories.

Noonan Tool & Machine Works, Rome, N. Y., second gallery, 305—Tools.

Norris Auto Co., Saginaw, Mich., second gallery, 363—Tire protectors.

Norton Co., New York City, second gallery, 343—Grinders and emery supplies.

Oliver Mfg. Co., Chicago, Ill., first gallery, 172—Jacks and accessories.

Pacific Iron Works, Bridgeport, Conn., second gallery, 329—Motors.

Pantasote Co., New York City, first gallery, 142—Top and upholstering material.

Patterson, Gottfried & Hunter, Ltd., New York City, second gallery, 346—Tool outfits and specialties.

Pennsylvania Rubber Co., Jeanette, Pa., first gallery, 180—Tires.

Perfection Spring Co., Cleveland, O., second gallery, 349—Springs.

Pneu L'Electric Co., New York City, first gallery, 217—Tires.

Post & Lester Co., Hartford, Conn., first gallery, 216—Accessories.

Presto Detachable Rim, Jersey City, N. J., second gallery, 341—Rims.

Prest-O-Lite Co., New York City, first gallery, 155—Gas tanks and tire inflators.

Thomas Prosser & Son, New York, second gallery, 308—Krupp steel.

Raimes Co., New York City, second gallery, 366—Metal polish.

Randall-Faichney Co., Boston, Mass., second gallery, 340—Oil guns.

Rands Mfg. Co., Detroit, Mich., first gallery, 152—Tops and accessories.

Remy Electric Co., Anderson, Ind., first gallery, 167—Magnetos.

Republic Rubber Co., Youngstown, O., first gallery, 124—Tires.

Rose Mfg. Co., Philadelphia, first gallery, 109—Lamps.

Rountree-Stimmel Auto Check, New York City, second gallery, 304—Recoil checks.

J. H. Sager Co., Rochester, N. Y., first gallery, 146—Supplementary springs.

Saxon Lamp Co., New York City, second gallery, 320—Lamps.

Scandinavian Fur & Leather Co., New York City, first gallery, 227—Clothing.

Schwarz Wheel Co., Philadelphia, first gallery, 182—Wheels.

C. A. Shaler Co., Waupun, Wis., second gallery, 339—Electric vulcanizers.

Shelby Steel Tube Co., Pittsburg, Pa., first gallery, 114—Tubing.

R. H. Smith Mfg. Co., Springfield, Mass., first gallery, 154—Springfield motometers.

Spicer Universal Joint Co., Plainfield, N. J., first gallery, 197—Universal joints.

C. F. Splitdorf, New York City, first gallery, 106—Timers, distributors, coils and ignition specialties.

Sprague Umbrella Co., Norwalk, O., first gallery, 194—Tops and wind shields.

Springfield Portable Construction Co., Springfield, Mass., second gallery, 377—Portable automobile houses.

Standard Brake Co., New York City, second gallery, 335—Brakes.

Standard Roller Bearing Co., Philadelphia, first gallery, 200—Bearings.

Standard Welding Co., Cleveland, O., first gallery, 160—Tubing and electrically welded parts.

Stewart & Clark, Chicago, Ill., first gallery, 203—Speed indicators.

Supplementary Spiral Spring Co., St. Louis, Mo., second gallery, 359—Supplementary springs.

Swinehart Clincher Tire & Rubber Co., Akron, O., first gallery, 188—Tires.

Timken Roller Bearing Axle Co., Canton, O., first gallery, 118—Bearings and axles.

Travelers Insurance Co., Hartford, Conn., main floor, 53—Liability and accident policies.

Traver Blowout Patch Co., New York City, second gallery, 315—Tire repair outfit.

Triumph Engineering Co., Brooklyn, N Y., second gallery, 321—Spark plugs.

Troy Carriage Sunshade Co., Troy, O., second gallery, 358—Tops.

Turner Brass Works, Sycamore, Ill., first gallery, 133—Harroun automobile bumper.

Veeder Mfg. Co., Hartford, Conn., first gallery, 113—Odometers and speed indicators.

Ventilated Cushion & Spring Co., Jackson, Mich., second gallery, 309—Upholstery spring system.

Victor Shock Absorber Co., New York City, second gallery, 354—Shock absorbers.

Warner Gear Co., Muncie, Ind., first gallery, 176—Gears and parts.

Warner Instrument Co., Beloit, Wis., first gallery, 179—Warner Auto-meters.

Weed Chain Tire Grip Co., New York City, first gallery, 131—Non-skid chains.

West Side Y. M. C. A. Automobile School, New York City, second gallery, 362—Examples of pupils' work.

Wheeler & Schebler Co., Indianapolis, Ind., first gallery, 174—Carburetters.

Whitlock Coil Pipe Co., Hartford, Conn., first gallery, 102—Radiators and automobile parts.

Whitney Mfg. Co., Hartford, Conn., first gallery, 105—Whitney chains and keying system.

Winchester Speedometer Co., New York City, first gallery, 189—Speed indicators.

Witherbee Igniter Co., New York City, first gallery, 186—Witherbee storage batteries and Wico spark plugs.

William Wooster, New York City, second gallery, 318—Accessories.

The Village Blacksmith.

Under the spreading chestnut tree
The village smithy stands,
The smith, a mighty man is he . . .

——Now prepared to meet demands
For prompt repairs to auto cranks,
Magnetos, sparkers, chains, hoods, tanks;
New parts for every known machine;
Full stock oil, graphite, carbide, gasoline—

. . . . And the muscles on his brawny arms
Are strong as iron bands.

His hair is crisp, and black, and long,
His face is like the tan;
His brow is wet with honest sweat,
He earns whate'er he can . . .

—Vulcanizing, riveting, brazing, repairing
Of radiator, clutch, cylinder, bearing;
Inner tubes for sale, cement, patches, tires,
Battery cells, spark-plugs, coils, wires—

. . . And looks the whole world in the face,
For he owes not any man.

Toiling—rejoicing—sorrowing,
Onward through life he goes;
Each morning sees some task begun,
Each evening sees it close . . .

—Tires recovered, relined, retreaded; sectional and tube patching; aluminum brazing; repairs to radiators, mud-guards, sprocket-cones; overhauling and adjustment of every description; on hand day, night and Sundays (residence, third house to right, behind school house); prices reasonable; all work guaranteed; patronage of automobile resp. invited—

. . . Something attempted, something done,
Has earned a night's repose.

—Life.

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CLOSE RUN FOR KNIGHT TROPHY

Hoffman Again First in Chicago Economy Contest—Much Arithmetic Required to Determine Results.

For the third consecutive time Harry Paulman's Pierce Arrow car has been returned a winner in a Chicago economy test. Its latest laurel wreath was won in the 200 miles economy test for the Knight trophy which was decided in the Windy City last Friday, 18th inst. The contest was one in which, as the results abundantly demonstrated, practically every drop counted.

Paul Hoffman drove the Pierce but his victory was not by such a large margin as to leave a chance for much hurrahing. Not that the victory was not deserved or anything like that. Far from it, for G. H. Bird's Corbin car disputed the victory brilliantly, losing first place by only .075 percentage. If the battle for first was close, so was the fight for third, fourth and fifth places, in which the Apperson, Berliet and Silent Knight figured, and the technical committee was forced to run its summary into three decimals before it could arrive at the result.

This economy contest was for the Knight trophy and was open to the first ten cars that finished in the Chicago Motor Club's Chicago-Valparaiso economy contest in September, which Hoffman won. The course was from Chicago to New Carlisle, Ind., and return via Michigan City, a distance of 200 miles, and although the old formula of dividing the weight of the car by the weight of the gasolene consumed was employed, the committee had evolved a weight allotment, that was designed to make it more of a motor efficiency contest than an economy test. Each car had to carry 13½ pounds of weight for each cubic inch of piston displacement.

Thursday afternoon special tanks containing 15 gallons of gasolene were attached to the front seats of the contending cars, the tanks were filled and the cars put under lock and key in a garage and also under the surveillance of two Pinkerton detectives, to guard against tampering during the night.

Despite the early hour of 6 o'clock, all the contestants were ready for the start a few minutes after that time. Hoffman was the lucky drawer and started first after the Ford pilot car. The order of start of the other contestants was: C. W. Birchwood, Haynes; C. A. Tilt, Diamond T.; W. W. Shaw, Berliet; A. J. Banta, Locomobile; C. Y. Knight, Silent Knight; G. H. Bird, Corbin; J. Buchanon, Berliet, and Edgar Apperson, Apperson.

The run to New Carlisle was uneventful, the pilot car reaching there first, followed by A. J. Banta in the Locomobile. There was a long wait for the others who ran well within the legal speed limits. On the way back there was one accident that threatened to prove serious. Two women were driving along the road in a buggy and when they saw the press car bearing down upon them one of them jumped out directly in front of the car. To avoid running over the woman Donald Kilbourne, who was driving, had to turn quickly and in so doing bumped against the carriage, which was overturned. The other woman was thrown out and bruised some, but both were driven to their homes in the automobile, as their horse had taken fright and made tracks for home.

The first car to finish at Chicago back of the pilot car was the Locomobile, manned by Banta, and after all had checked in the technical committee got out their arithmetics and two or three reams of paper and set in to work. After several hours they announced that the Corbin had won, and on the strength of that announcement, the Corbin adherents treated the crowd. Then the committee located some more figures to prove how it happened and discovered that it didn't. Somebody had mislaid five-sixth of an eon of gas, and this added to the floating decimal divided by the vibration of the general opinion subtracted the Corbin from the headlines. There was not any dispute, as the victory was so close that a second's evaporation of gasolene on either side would have changed the result. The Pierce Arrow, which weighed 5,832 pounds, consumed 12 gallons 15.6 ounces, and its percentage was 1.875. The Corbin, weighing 3,649 pounds, used 7 gallons 3 quarts 17 ounces; its percentage was 1.8.

So close was the fight for third place that the numerical jugglers had to move the decimal point several places before they could swear to the answer. The Apperson had 1.647 and the Berliet, driven by Shaw, 1.637. The Silent Knight was next with a score of 1.54. The complete summary of this unusual and hard fought contest follows:

Pos.	Driver.	Car.	Weight.	Fuel Consumption. Gal.	Qts.	Oz.	Percentage.
1	Paul Hoffman,	Pierce Arrow	5,832	12	0	15.6	1.875
2	G. H. Bird,	Corbin	3,649	7	3	17	1.8
3	Edgar Apperson,	Apperson	6,412	15	0	26.5	1.647
4	Waldon W. Shaw,	Berliet	3,123	7	1	25.5	1.637
5	C. Y. Knight,	Silent Knight	4,723	11	3	23.5	1.54
6	C. A. Tilt,	Diamond T	4,784	13	0	15.25	1.425
7	C. Birchwood,	Haynes	3,830	10	2	4.5	1.42
8	James Buchanan,	Berliet	3,123	9	0	15	1.33
9	A. J. Banta,	Locomobile	2,683	12	1	17	0.848

FARMERS FOUGHT HILL CLIMBERS

Rochester's Twice Postponed Contest Attended by Rustic Violence—Talbot Makes Best Time of the Day.

Twice postponed on account of unfavorable weather the annual hill climb of the Rochester Automobile Club, held on the Penfield dugway, near that city last Saturday afternoon, 19th inst., was a success despite the hostile manifestation of neighboring farmers. Several thousand spectators were attracted to the hill, but the meet was not appreciated by the farmers, and because of agrarian anger, there were several lively scrimmages and exasperating delays.

The fastest time of the day was made in the free-for-all gasolene touring cars, which was won by Charles Talbot, driving a Franklin, who climbed the hill in 48 seconds. The summary:

Gasolene Runabouts Costing $1,000 or Less.

Fred E. Mason, Ford	1:22⅗
Blank, Cadillac	1:47⅖
J. W. Cook, Ford	1:57

Gasolene Runabouts Costing $1,000 to $2,000.

Blank, Stoddard-Dayton	1:08
R. G. Finacune, Franklin	1:08⅗
W. H. Campbell, Stoddard-Dayton	1:18⅘

Gasolene Touring Cars Costing $1,000 to $2,000.

J. F. Hitchcock, Franklin	1:14
George E. Noeth	1:22
E. M. Gillette, Cartercar	1:26⅖
N. O. Laffel, Franklin	1:41

Gasolene Stock Runabouts.

Dr. J. J. A. Burke, Stevens-Duryea	1:02

Gasolene Stock Touring Cars.

Walter Smith, Pope-Hartford	1:02
John Heberger, Corbin	1:04⅖
Blank, Stoddard-Dayton	1:07

Gasolene Stock Touring Cars.

George Foster, Pope-Hartford	0:58
Blank, Oldsmobile	1:00
J. F. Hitchcock, Franklin	1:04

Gasolene Stock Runabouts.

Roy Hollis, American	0:53⅖

Gasolene Stock Touring Cars.

J. A. Maiser, Pope-Toledo	0:56⅕

Gasolene Touring Cars.

J. Natez	0:52
N. B. Stetsel	0:53
J. J. Finacune, Packard	0:55
H. Strickland, Packard	0:55⅕
C. Parolik, Stearns	0:56⅕

Free-for-all Gasolene Touring Cars.

Charles Talbot, Franklin	0:48
C. S. Bonbright	0:51
J. J. Finacune, Packard	0:52⅕
C. B. Judson	0:52¼
H. S. Woodworth	0:54⅕
W. B. Armstrong	0:56
G. J. Bauer	0:58
W. S. Smith	0:59
A. M. Lindsay, Jr.	1:30

Free-for-all Gasolene Runabouts.

Roy Hollis, American	0:49
Blank, Stoddard-Dayton	0:53¼
Dr. J. J. Burke, Stevens-Duryea	1:05⅖
R. G. Finacune, Franklin	1:18⅘

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MICHELIN

FRANCE
ITALY
ENGLAND
AMERICA

No more Duty—no more trans-Atlantic Transportation Charges on MICHELIN Tires. Manufacturers can now afford to equip their cars with MICHELINS. What kind of an excuse can be given by the agents of the manufacturer who can, but does not?

The car-buying public KNOWS that MICHELIN Tires are the world's standard—are by far the most durable, serviceable, most economical that money can buy. The car buyers want the BEST—manufacturers can now afford to give it to them.

The manufacturer who DOES equip his 1908 cars with MICHELIN Tires thereby gives to the public an unmistakable demonstration, a convincing proof, that he is determined to make his product the best in its class in EVERY particular. He gives his agents the strongest possible selling argument for the new year.

A large number of America's highest-priced cars will use MICHELIN Tires. They will be the standard catalogued equipment of leading cars in other classes. Agents who sell these cars will find that MICHELIN Tires are a tremendously powerful selling aid. Customers who buy these cars will find MICHELINS a great saving in tire cost in the course of a year.

The high import duty and heavy transportation charges on MICHELIN Tires have been eliminated through the erection of our great American MICHELIN factory. The tires made here are identical with the output of our other factories in France, England and Italy—the world-famous MICHELINS that have been used on the winning cars in all the world's greatest races for the last six years and which made their victories possible.

Exhibiting at Grand Central Palace, Gallery Space 129.
Exhibiting at Madison Square Garden, Basement Space 209.
Exhibiting at Chicago Coliseum, Annex Spaces 102 and 103.

CLINCHER TYPE.
Round, Flat and Anti-Skid.
American and Millimeter Sizes.

QUICK DETACHABLE TYPE.
Round and Anti-Skid.
American Sizes only.

All the above can be used on any of the well-known Quick Detachable Rims.

MICHELIN TIRE COMPANY,
Milltown, N. J.,
U. S. A.



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GOOD RACING AT KANSAS CITY

Derby Day Crowd at the Sixth Annual Meet—Chandler Captures Four of the Chief Events.

A record breaking crowd of 6,500 persons attended the sixth annual race meet of the Automobile Club, Kansas City, at the Elm Ridge track, near that city, on Saturday afternoon last, 19th inst. Although no records were broken, fast time was the order of the day. Joseph Chandler made a "killing," winning four firsts. Not since the memorable jockey club meetings had Elm Ridge presented such an animated appearance. It was like Derby day. Before the first event was called every seat in the grandstand was occupied, the porches of the club house were crowded, the center field was crowded with automobiles and their occupants, while the fences were lined with spectators.

Chandler, driving a six-cylinder Stevens-Duryea, started his winning streak in the first event—a fifty miles endurance derby for stock cars. Nine cars started in the event and after the weeding out process began Chandler assumed a position in front, which he relinquished but once, then on account of a punctured tire. He finished first in 1 hour 10 minutes, a Mitchell being second with 47 miles.

Chandler brought his car to the front in the five miles for fully equipped touring cars costing $3,000 and over, in 5:59; the ten miles free-for-all for the Board of Trade's cup, in 11:35½, and the five miles match for fully equipped touring cars.

Honors in the other events were fairly well distributed, drivers of Stoddard Dayton cars winning both five mile runabout races; the Ford won two events and the Buick one. An exhibition mile by "Whistling Billy" White was covered in 1:05, and John Vogel finished first in the five miles for motorcycles. The summaries:

Fifty miles endurance derby, for fully equipped touring cars—Won by Joseph Chandler, Stevens-Duryea; second, Mitchell, 47 miles; third, Stevens-Duryea, 46 miles. Time, 1:20.

Three miles for fully equipped runabouts, costing $1,000 and under—Won by Ford; second, Mitchell; third, Maxwell. Time, 4:33.

Five miles for fully equipped runabouts costing between $1,000 and $2,000—Won by Stoddard-Dayton; second, Stoddard-Dayton; third, Jackson. Time, 7:42.

Five miles for fully equipped runabouts costing between $2,000 and $4,000—Won by Stoddard-Dayton; second, Moon; third, Oldsmobile. Time, 6:21½.

Five miles for fully equipped touring cars costing $2,000 and under—Won by Buick; second, Cadillac; third, Jackson. Time, 7:22.

Five miles for fully equipped touring cars costing between $2,000 and $4,000—Won by Ford; second, Stoddard-Dayton; third, Stevens-Duryea. Time, 6:28.

Five miles for fully equipped touring cars costing over $3,000—Won by J. Chandler; Stevens-Duryea; second, White. Time, 5:59.

One mile exhibition—By White racer. Time, 1:05.

Ten miles free-for-all, for Board of Trade cup—Won by J. Chandler, Stevens-Duryea; second, Oldsmobile; third, Ford. Time, 11:35½.

One mile high gear race—Stevens-Duryea made fastest time and Ford slowest time. Award withheld pending protest.

Five mile match for fully equipped touring cars—Won by J. Chandler, Stevens Duryea; second, Stoddard-Dayton. Time, 6:32.

Atlantans See a Strang Fast Mile.

As the meet was unsanctioned, and further than that was promoted by William H. Pickens, who has been suspended for his connection with the lamented Brighton Beach meet, it is likely that those who competed at Atlanta, Ga., Monday of last week, 14th inst., will receive a dose of American Automobile Association medicine in the form of suspension, that is, if the controlling body acts in accordance with its rules. Those who competed at the Atlanta meet are Louis C. Strang, New York City; John H. Bryant, Ernest Jones and W. L. Gilbert, of Atlanta.

That there are some 5,000 people in Atlanta and its environs who do not care how recklessly they squander their money was brought out by the "meet." The word "meet" is used grudgingly, for besides Strang's exhibition and a challenge match race between two local cars, there was nothing else to it.

Notwithstanding, there were about 5,000 people who readily thought they had their money's worth. This would be surprising but for the fact that the meet(?) was held in connection with the annual State fair, where every one who goes expects to get buncoed.

Piedmont track is a half mile affair and it was in very bad shape when Strang pushed his uncle's racing car on it for a mile record trial. Numerous horse races had the effect of making the surface unusually dusty, and after Strang circled it once preparatory to a flying start it was worse. Christie's young understudy made two laps in 1:16, and as this was three seconds faster than Barney Oldfield had done last year, the crowd proclaimed Strang a hero.

The only other race was a five mile challenge between the owners of a Ford and a Pope-Hartford. John H. Bryant drove the Ford and Ernest Jones and W. L. Gilbert sat in the other car. Bryant got the better of the start and lead until the finish, covering the distance in 8 minutes 6¼ seconds.

OLDFIELD AND SAVIN AT MEMPHIS

Barney Wins "Two Miles Sweepstakes for Purse of $1,000"—Local Riders in Well Contested Races.

For competing in Barney Oldfield's and Ollie Savin's race meet at Memphis, Tenn., on Saturday last, 19th. inst., a number of Memphis drivers made themselves liable to suspension by the American Automobile Association, for competing at an unsanctioned race meet. Oldfield and Savin already are under investigation for having promoted and competed in unsanctioned meets.

A crowd numbering 3,000 gathered at the Montgomery park track to witness the meet, which it might be added, was not so much on the hippodrome order as some other meets that Oldfield has had the promoting of. Several races for local drivers were provided and they all were spirited and well contested.

Tragedy came near lingering in the wake of the meet. Tim Green, a negro helper, employed by Roy Willener, was hanging on the steps of a White in the last lap of the two mile race. Jack Carey, in a Buick car was leading at the half mile. He ran a little wide and Willener attempted to go through on the pole. The Buick then swerved toward the inside rail, and Willener had to take his choice of running into the car or the fence. He chose the latter and a piece of scantling pierced the fleshy part of the negro's leg as the car ploughed through the fence. The boy was brushed off. Suffering great agony he was taken to a hospital ,where it was said there is a chance to save his leg if blood poison does not set in.

Oldfield drove several exhibitions, his best being a mile in 1:07. The summary of events follows:

Three miles for cars costing less than $2,000—Won by Jack Carey, Buick; second, Williams, Buick; third, Roy Willener, White. Time, 4:35.

Two miles for cars costing $3,000 or less—Won by Butler, Ford; second, McDonald, Rambler. Time, 3:55.

Two miles free-for-all stock cars—Won by J. W. Myers, Pope-Toledo; second, Butler Ford. Time, 3:35.

Five miles novelty—Won by J. W. Myers, Pope-Toledo; second, Barney Oldfield.

Two mile exhibition—By Ollie Savin. Time by miles, 1:08⅘, 2:18.

Two mile exhibition—By Barney Oldfield. Time by miles, 1:07, 2:15.

Three miles free-for-all handicap—Won by Ollie Savin (scratch); second, J. W. Myers, Pope-Toledo (0:20); third, Williams, Buick (1:30). Time, 4:14⅘.

Two miles sweepstakes for "purse of $1,000"—Won by Barney Oldfield; second, Ollie Savin. Time, 2:39⅘.

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In the Retail World.

W. B. Bennett is erecting a garage at 651 Clarkson street, Denver, Col. The structure,of brick, will cost $8,000.

Robert Smith, Rockford, Ill., moved into his new garage in Eighteenth street this week.

The Clifton Garage & Livery Co. will erect a commodious garage on Howell avenue, Clifton, Ohio. The estimated cost will be $50,000.

The Utica Motor Car Co., which has the agency for the Pierce Arrow in Utica, has opened a branch in Syracuse. A. A. Lederman will be in charge.

Judge Holt has granted a discharge in banqruptcy to Albert H. Funke, who dealt in automobile supplies and sporting goods at 83 Chambers street, New York City. His liabilities were $102,338.

A. E. Morrison has joined partnership with A. J. Price, and the firm will handle the Rainier in Boston vicinity. Morrison & Price, as the firm will be styled, will be located at 169 Huntingdon avenue.

The building on South Madison avenue, Peoria, Ill., now occupied by William Turnbull as a garage will be torn down to make room for a new garage. It will measure 52 x165 feet and have entrances on two streets.

The Borderwisch & Glancy Automobile Co., which maintains a garage on North Jefferson street, Dayton, Ohio, has been changed to the Bordenwisch Automobile Co. Since the death of E. M. Glancy, Edward Borderwisch has bought the entire niterest of the firm.

The Star Motor Co., has opened a garage at 222 Halsey street, Newark, N. J. Lester B. Harris is president of the new concern; Leon B. Harris is treasurer, and P. F. Gillette, formerly with the Plainfield Motor Car Co., will act in the capacity of secretary and general manager.

W. M. Peale, of Philadelphia, has purchased the Varn Automobile Co., St. Louis and Campbell streets, El Paso, Texas. The name will be changed to Peale Automobile Co., and it will have the agency in El Paso and territory for Ford and Reo cars.

An involuntary petition in bankruptcy was filed last week in the United States District Court against the Plaza Automobile Co., 918-920 Union street, Brooklyn, on petition of Abraham Adelbey. The company, through its president, Howard B. Sands, admitted its inability to pay its obligations and Oscar A. Lewis was appointed receiver.

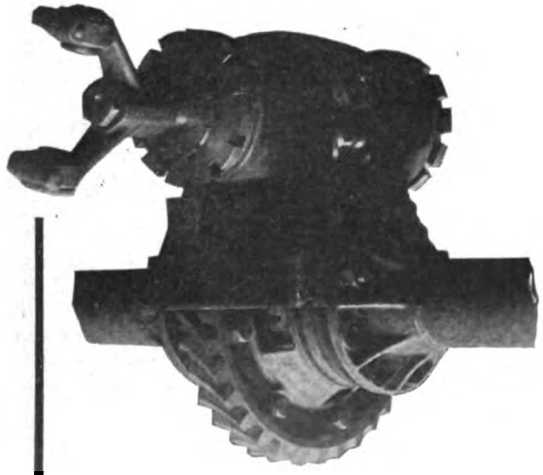
Los Angeles, Cal., real estate men are erecting a modern cement garage at Nineteenth and Arapahoe streets, that city, for which it is expected there will be many bidders. The walls will contain air chambers, insuring an even temperature at all times, and it will be equipped with turntables and all up-to-date appliances. The cost will be $15,000.

Duties of Trade Associations.

That the holding of automobile shows should not be the chief and only reason for local automobile trade associations is the opinion of Max L. Rosenfeld, the newly elected president of the Automobile Dealers' Association of California. He believes their work is much broader.

"Commercially," said Rosenfeld, in duscussing come of the larger questions of association duties, "the dealers at the present time do not hold the position in the business world that the trade demands. When we consider the large amount of money that automobile transactions represent, there are few commercial enterprises in any city that should command more attention. Up to the present time the members of an automobile trade association have been satisfied with merely keeping together for what looks like the sole purpose of holding annual automobile shows. A trade association should do more. It should look into the character of its membership. It should watch the names submitted for admission. Lax methods of doing business, and the breaking of contracts, written or verbal, on the part of either members or their customers, or on the part of the manufacturers with whom they deal should be investigated. It is only through close attention to matters of this nature that we will be able to command the respect of the business world."

HINDLEY SPIRAL GEARS



Especially adapted

to the

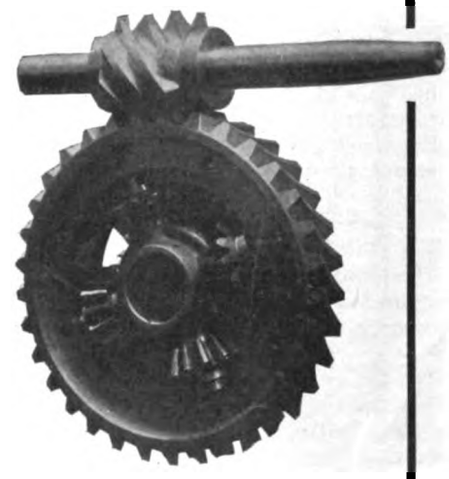
HEAVY TOURING CARS

AND

TRUCKS

These Gears were used on a Mitchell Truck in its run from Chicago to New York.

You are invited to ride in our demonstration car when in Philadelphia.



MORSE, WILLIAMS & CO., *Engineers,* Philadelphia, Penna.

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Assembling: Its Relation to Success and to Failure

American cars have rapidly advanced during the last few years to a position much envied by the makers of other lands at the present time, and one of deserved repute. Their design is complete, in that it is not confined to the mere delineation of parts, but is extended to embrace the very intimate processes by which they are produced; their construction is unstinted in the matter of costly and rare materials, which are applied even in cars of the cheaper grade; the extensive use of standardized and interchangeable parts advances them still further in the path of absolute utility. But too many makers manifest a tendency to skimp in the assembling process, both the labor and pains which are due it, thereby stultifying their product and threatening at once their own position in the industry, and that of their fellow makers.

However unwelcome the fact may be, it is undeniable that just where the advantages of specialized construction of components, and the benefits of multiple production methods might best be utilized in securing a product the imperfections of which would be reduced to their lowest terms, "American haste," and a pardonable desire to reduce working costs are allowed to interfere.

Haste That Makes Waste.

Cars which are well designed, well constructed, and built of excellent materials, frequently suffer a hard life and a disconsolate end, through being put together hastily or roughly. Thousands of dollars expended in the preliminaries of manufacture, are literally wasted because the car upon which they are outlayed is dumped upon the market, with the final inspection and testing processes, either restricted by an overbearing sales department, or strangled by inconsiderate or incompetent management. The fault is not inclusive, but it is sufficiently general to attract attention. Furthermore the causes which lead up to it are so dominant and so evident as to demand immediate removal.

The work of assembling and testing cars is work of a thoroughly routine nature. It presents few of the exigencies developed by other divisions of the productive effort. Accuracy in the elementary processes is constantly improving, which tends to simplify still more these final branches of the work. Hence there is a well defined tendency to pass over them more and more lightly. But the nominal economy of hasty assemblage and inspection, develops an unsatisfactory quality in the product which though often traced to other apparent sources, frequently springs from no more remote cause. So the "turning out" of large numbers of cars at high speed, often may be counted against the maker who boasts of the fact, while every hour of labor saved in final adjustment, is taken directly from the user, who must give for it not one, but often many hours of time or its monetary equivalent.

Carelessness Spreads.

Hasty assembling means that that desire to make a showing which animates the management, is likely to be injected into the mechanics who perform the work, leading them to produce results with little regard for method. In this way small attention is likely to be paid to the alignment of bearings, for instance, and even where self-aligning systems are employed, such neglect results in the development of excessive resistance, even while the parts are in their normal relation. Similarly adjustments are apt to be hastily made, or even overlooked entirely; nuts are turned down "hand tight," and left for the wrench which is perpetually busy elsewhere; piping and wiring are strung up with an eye to convenience in the beginning rather than convenience in service; bolt holes are "drifted" into line; bearings left slack or shimmed out instead of being scraped to a seat; and generally interest in doing the work is sacrificed to interest in completing it.

Much of the result of such haste might be overcome by careful testing and running in, or "breaking in," as it more properly becomes under such circumstances. But where such conditions prevail in one department, they are almost certain to exist in the same degree throughout the plant. The tester who is given so many cars to pass up in a day, devotes himself to the simple purpose of making them pass the stated trials to which he is confined. Usually he does not bother himself with parts which are not so badly awry as to cry for a remedy. His sensibilities are not easily punctured, and much that might appeal to the owner as being decidedly wrong, escapes his attention as being trivial, or of so common occurrence as to merit no notice.

Cars so produced, when sent about their work, soon go wrong. It may be the duty of the agent to set them right; perhaps the company is so placed as to be able to rectify some of the evils which thus have been produced. Eventually, however, they rack themselves to pieces, and so the high maintenance costs of many low priced cars, becomes chargeable less to their cheap construction, than to their hasty production. Bearings which are permitted to remain out of line while the car is new, soon become loose and develop a pound. Loose nuts never tighten themselves. Poor adjustments, do not improve under the tutelage of owners who are novices. Careless handling on the road is bad enough, but added to careless handling on the assembling and testing floors, it invariably sows the seeds from which spring the junk man's harvest.

Durability of Good Work

Conversely, cars of wretched design frequently perform remarkably well, all things considered, because they have received close attention in the final stages of production. This is noteably true of some of the earlier foreign cars, which, according to present standards embody much that is radically wrong in structure and material. Yet such cars, even though produced by makers little known, in their day, and perhaps forgotten now, still amble about with no more racket than attended their progress the day they left the shop.

The contrast in this respect between old

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and new cars, is frequently remarked, but seldom attributed as largely as it should be, to the fact that the early machines were put together by mechanics, and that no time was spared in making them work as well as they could work. Thus many of the old French cars, began by being old, as it were—were hundreds of hard miles old before they ever were new at all—yet their age never seems to weigh them down, and the signs of decrepitude are manifest first in their scabby paint and shaky bodies.

Considered very broadly, the relation of assemblage to the other branches of production is thus a peculiar as well as an important one. In fact, as a process, it may be considered the first real point of differentiation between motor car manufacture and machine manufacture along any one of a dozen other lines. It is the process under which the car first assumes its individuality, and as such requires a degree of specific method not found in any of the more elementary branches of its creation. Failure to regard assembling in this light may possibly account for the easy and even slipshod way in which it is passed over in many shops. Its apparent function is merely that of bringing together a number of finished parts, each of which is fitted exactly to fall into its appointed place with others to which it is co-related. Actually, it is the point at which all processes common to other manufacturing lines cease, and motor car building commences. In this way it comes to have a totally different significance.

An Aid to Specialization.

Thus all mechanical parts, for whatever use they are intended must be cast or forged, dressed, milled, drilled, jigged and fitted, according to certain methods common to every machine shop. Every part which goes into the car is produced under the well-tried rules of one or another well known trade. The purpose they are to fulfill has little effect on the detail methods of doing the work. Whatever differences exist in this way, are taken care of by the engineer in laying down the sequence of operations. But the co-ordination of the parts in the finished machine, requires a different method from that employed in the assemblage of mowing machines, for instance, or printing presses, or machine tools. Whatever advantage the automobile maker may have taken of past experience in other lines in the production of the parts, is thus lost sight of when the parts are put together, and though the process has the appearance of simplicity, its difficulties are in reality very great. In order that the parts shall go together in the way they are intended, each maker must work out his own assembling method, and the deceptive aspect of the work constitutes its greatest handicap on this account.

Incidentally, the independence of the elementary processes from the final and cumulative one, lends itself most admirably to the requirements of specialization. The mechanical processes incident to production are closely related, as already observed. Design and the sequence of operations differ more particularly with different classes of work. So the maker finds himself enabled to avail himself more and more of the specialists' efforts in parts which he buys already completed and ready for installation in the chassis. This is broad economy except where a great number of cars are to be made. But it breeds trouble unless extreme caution is employed in the assembling process.

Where all the parts of the car are made in one factory, the departments producing them may be as independent as though they were independently owned and operated, but the standards are the same, and both the accurracy and quality of the work is found to harmonize. This is not the case where parts are bought of special makers, or are jobbed in the open market. Hence the more the maker depends on outside sources of production for the components of his car, the greater the need of accurate and close work in assembling them.

Two Methods of Assembling.

Two possible methods face the maker in his consideration of the assembling problem, and their applicability depends in great measure upon the nature of the car, in regard to the relation of its parts. One may be termed the complete assembling method, and the other the partial or group system. One follows the lines of building construction, where the materials are brought onto the ground and put into place one by one as their places are made for them; while the other resembles more nearly the equipment of a factory into which are put a number of machines, each complete in itself. In the one case, the various parts are brought to the assembling floor as fast as they are required—or more often, as fast as they are made—and are used as needed. In the other, such groups of parts as are capable of independent assemblage are put together, adjusted and tested in the departments where they are produced, afterward being set up on the assembling floor. Evidently, the first method throws the onus of assembling, with all its difficulties on the assembling crew, while the second directs responsibility for a large proportion of it upon the departments directly responsible for any difficulties which may arise.

The Group Method.

Commonly, motors, change speed gears, live axles, and such of the auxiliaries as timers, magnetos, pumps and lubricators, are set up independently. Yet with proper system, the method is capable of further extension, in the assemblage of other parts, as well as in detailed operation. Complete assembling is practically obsolete at the present time, but its trail is found in the method by which the assembling crew is made to do much of the work of fitting which belongs in other departments. The more the parts are required to be complete in themselves, the more the groups are mounted and tested independently, the greater the advantage in reducing the number of operations incident to the final process, and in simplifying the work.

Furthermore, with the simplifying of the work in this way, it becomes possible to assign the operations to the same men repeatedly as the work comes up in rotation, thus developing specialization among the assembling workmen as well as in the elementary processes. The old method of giving to a single crew the entire work of assembling was wasteful, in that it prevented close time accounting on each operation. With the better segregation of the work, each man's task is laid out for him, and his time on each job is closely checked, thus making cost keeping nearly as simple in assemblage as in ordinary productive labor at the bench or machine tool.

Close Inspection Assured.

Another feature of the group method, which is of great utility, is that it compels close inspection and furnishes an automatic check on the rate of production, which is not always possible otherwise. The requirement for close accounting of manufactured parts, both as to rate of production and quantity on hand, is essential because the time required for the production of certain of the components is much greater than that required for others, while some are required in duplicate for each machine, and others singly. Hence, since all must be ready for installation at practically the same time, the rates of production of different departments must vary. Unless closely checked, any variation in this rate must put a stop on the rate of assemblage and either delay the output, or involve that greatest of all factory wastes—overtime work. Where parts are assembled group by group and the groups are tested independently, the testing or inspecting processes furnish a simple and automatic check on production, which is useful in a double sense on that account and adds but little to the expense of the bookkeeping department of the shop.

Inspection, which becomes more and more requisite as automatic production and duplicating machinery and methods are used, should not be permitted to relax as the assembling floor is reached. Yet in many cases, the fact that all parts are according to guage, and all groups have passed muster leads to the conclusion that the final gathering together of the components must of necessity proceed smoothly and without danger of error. That such is apt to be the case, however, is apparent in many cars which are assembled under this mistaken notion. The fault in any case, where difficulty arises, however, is due

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rather to lack of proper oversight during the assembling process, than to any flaw in the basic method.

Where assembling is simplified in this way by the finishing and fitting of all parts, the tendency is for the mounting to be done in the most offhand and perfunctory manner. Even very considerable errors in construction of parts, may thus be passed over without correction, and great harm done in consequence. With constant oversight, however, and the use of standard methods of test, by gauge and otherwise, the checking being done by the inspection department, such errors must be discovered and recorded, not simply in season to prevent injury to one or two cars, but also in time to prevent a constant repetition of the bungle through the entire line. Similarly such a method of constant inspection demands the use of proper parts in every case, and prevents the transposition of similar parts, or the transfer of parts from one model to another.

Work of Testing by Groups.

Similarly, testing by groups before the final test of the complete machine, is at once a more exacting and accurate process than that which is possible after the chassis has been completed. The two chief points by which a running test may be judged are the heating of bearings, and the development of undue resistances. These criterions, if applied to the complete machine, while serving to indicate the presence of trouble, seldom give more than a feeble clue to its real cause. Whereas if each group of parts is known to have been in perfect running order before being assembled, any such symptoms developing on final test, at once indicate a fault either in alignment or adjustment, and show faulty work on the assembling floor, or improper laying out of the chassis.

More than that, the work of running-in and testing when performed group by group, is certain to be done with greater attention to detail than when left to the final and general test, because each department is held to certain specifications in its product and any failure other than of the most insignificant sort, involves the throwing back of the group. This lends certain prominence to the failure which otherwise might escape it. Furthermore, it places the cost of rectifying the mistake under its proper head, namely that of the producing department. Cost keeping again is simplified in this way and all cross charging between departments is eliminated.

Dangers at the Finish.

Again, however thoroughly the work of chassis assembling and testing may be carried out, there is yet room for the injury of the machine to an almost incalculable degree if it is not properly handled in the final process of finishing and reassembling. Commonly, production is accounted as being at an end when the chassis is sent up on the "paint line." Far from it, however, the dismounting of wheels, brakes, driving gear and control mechanism which is generally involved in the finishing process, together with the uniformly unmechanical tendencies of painters as a class, tends to undo much of the good work that already has been done, in the way of adjusting and smoothing the working of such parts as are subject to treatment during the final stages of completion.

Careful makers see to it that the final assemblage is placed in the hands of competent mechanics who will thoroughly clean bearings which have been exposed, and look to the final adjustments after the body has been put in place and the turnbuckles of brake and distance rods smeared with paint. Hasty production, on the other hand, implies a desire to overlook such small details and to take it for granted that the work of the road tester will be left undisturbed. How seldom it is, and how frequently cars require thorough retuning in many ways after being put into commission, only the heads of carefully conducted finishing departments know. That a great amount of such work is generally required, is beyond question. That it is too frequently overlooked, unfortunately, is true, especially in factories where records are being broken in the matter of voluminous output.

Sales Department Enters.

Here, too, the work of the inspection department should never be allowed to relax. Inspectors as a class, are unlimited by the regard for big results, which ferments in the superintendent's office. Their simple occupation of making sure that things go according to specifications, forbids any such disconcerting spirit to work. Hence it is only under the direct impetus of orders to "let them through anyhow," that their eyes can be closed to improper conditions in the product as it leaves the factory. Yet even with the best of systems, there is always a chance of lax observation and hasty or careless work, regardless of whatever pains may be taken to put a stop to it. Even at the best, all departments of the factory come under the general head of "production," and all co-operate to the one end of building cars. Every department is more or less embarrassed by conditions existing in every other.

The sales department, on the other hand, is hampered by no such intimate considerations. It is concerned only with matters relating to the salability of the product—whether it will do what it is advertised to do, and whether there is sufficient uniformity in the output to make each car actually worth as much as every other of its type. On this account the system employed by one or two American makers of the more careful sort, whereby the final test after finishing is made jointly by representatives of both factory and selling forces, appears to furnish the best cross check possible. Under this system, one inspector is actuated solely by the motives of the mechanic and the factory behind him; the other regards the car in the light of a piece of merchandise, and looks upon its performance with a view to its possible selling value.

This co-operation between the production and selling departments is a direct recognition of a true relationship which it is well to bear in mind. Nominally, close standards of design and manufacture are directed solely for the benefit of the selling end of the business. Yet too often the selling department is called upon to perform an unnatural duty in getting rid of a faulty product, and too often its relation with the active business of production is strained and inharmonious.

Value of First Perfomances.

Whatever may be the ultimate worth of a car, its performance during the first few weeks of its active service measures largely the esteem of its owner. Good running qualities early in the life of the car are more dependent upon careful assemblage and the check upon it which is obtained through careful testing and inspection, than upon quality of material or upon details of design as affecting actual performance. Therefore the maker who looks upon his product from the broad viewpoint of the merchant as well as the producer, must consider the final stages of manufacture as of supreme importance. An apparent lack of appreciation of this point has already done much harm to the typical American, product, as expressed in a comparatively limited number of machines which have been carelessly put together. So great is the need of more care in this respect, and so far have matters of design and construction progressed in other respects, that this one matter of care in applying the finishing touches to the machine well may be regarded as the crux of the situation at the present time. It is not the cars so much as the standards of the makers, which require mending, and though the requirement may be limited to but a small number, numerically speaking, its meaning to the industry at last is very great indeed.

May Build Railway Inspection Cars.

As the result of good work on the part of an experimental car which they built and which has been in use on the C., M. & St. P. Railway, it is probable that the Faribault (Minn.) Gasolene Engine Co., will engage in the manufacture of motor driven railway inspection cars. A friction drive is one of its chief features. In fact, it is stated that the motor and transmission may be applied to an ordinary handcar and thus dispense with the manual labor.

"The A B C of Electricity." Price 50c. The Motor World Co., 154 Nassau St. New York City.

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EUROPEAN AND ASIATIC ROADS

French Government Dealing with the Dust Problem—Turkey Lax in Construction and Repair.

Roadways, their process of construction, maintenance and repair and the dust problem, are being given more attention and study by American consuls abroad now than formerly, before the introduction of the automobile, and it is not unusual for the daily consular report issued by the Bureau of Manufactures, at Washington, to contain one or more accounts of road building abroad. In a recent report roads of no less than three countries were discussed —France, England and Turkey.

In stating that the question of the suppression of road dust has been, within the last few years, a subject of constant attention on the part of the French government, through the department of public works, Consul W. H. Hunt, of St. Etienne, sums up the results of the experiments as follows:

"Hitherto water alone was employed for the purpose, but its effect was only transitory and the treatment had to be renewed every morning. This half measure nevertheless gave satisfaction until automobiles and road tramways began to circulate, creating, by their speed, an amount of dust as annoying as it was previously unknown. A report has just been presented to the minister of public works, reviewing the advantages and disadvantages of four methods, considered as more or less effective in laying dust—a coating of crude tar mixture, heated petroleum, a solution of water and salts, and construction of a beton and tar surface.

"To the mixture of crude tar, tar oil in the proportion of 10 per cent. is added to render it more fluid, and before sprinkling it on the road certain conditions are necessary—the road should be more or less cylindric in shape, recently macadamized, dry, and swept of all dust. The tarring should be done in dry and warm weather, while no circulation of vehicles should be allowed until the coating is sufficiently dry.

"The durability of the coating varies as to the time of the operation, whether in summer, autumn, or winter. If done in the last two seasons, the tarring seldom resists until the following spring. Very frequently it disappears at the end of two or three months leaving in its place an abundant supply of disagreeable mud. As long as the coating of tar endures, the road bed is guaranteed against wear and tear, but once it gets diluted the road becomes deteriorated all the more rapidly, as the mud retains the water with greater facility. Although the quantity of the tar mixture employed varies with the absorbent nature of the road, a proportion of two pounds to the square yard is considered sufficient Frost does not seem to have any evil effect on tarring, but heat may soften it and render it slippery. The cost of tarring is estimated at 3 cents per square yard.

"The second method, or that of petroleum heated to boiling point, is used in the north of France and around Paris. The variety of oil employed is that known under the name of "mazout." The oil is placed in reservoirs similar to ordinary watering carts and sprinkled over the roads, previously swept. It is allowed to cool, after which the dust is swept back over it again; the dust is effectively laid and will not adhere to the car wheels. Unfortunately, autumn rains rapidly destroy this coating. In dry climates, however, the above two methods are very effective against dust.

"The saline mixture consists in either plain sea water or a solution of certain salts (chloride of calcium or chloride of magnesium, which from their hygrometric properties maintain on the road the humidity of the atmosphere, thus prolonging the effect of ordinary watering. Information, however, is wanting as to the results of the experiments.

"Westrumite is tar rendered soluble in water by the addition of ammonia and other cheap products. It is particularly useful in preparing a race track, as its effects are limited as to duration.

"The fourth and last method is costly and has not yet been put into operation to any extent in France. It consists in constructing the road with beton or concrete, into which tar is incorporated. Further experiments are about to be made by the government, not only for the purpose of adopting the best dust-laying substances, but also for determining the effect of the operation itself on the roads."

Turkey presents difficulties for automobiling because of its inferior roads, which are especially bad in Asiatic Turkey, according to Consul E. L. Harris of Smyrna. "Generally speaking, road building in this part of Turkey is not in an advanced state, and but little attention is paid to it," states the American consul. "Large appropriations are made from time to time by the government for the purpose of building highways in certain parts of the country. Good roads are often built with this money, but no appropriations are made to keep them in repair after they have once been laid out. Some twenty years ago a splendid road was built from Magnesia-on-the-Meander to Sokia. About the time this road was completed a branch of the Aidin Railroad was extended to the same point, running almost parallel with the highway. From the time the railroad was completed the public highway was permitted to fall into disuse, and now it is extremely difficult for even a camel caravan to use it. The recent floods in the Meander Valley have destroyed a good roadway which led from Aidin, a town in the center of the fig district of Asia Minor, across the plain to some of the finest orchards known in that region. It is feared by those interested in figs that the road will not be repaired in time, if at all, in order that this season's figs from that particular district may be moved as rapidly to market as has hitherto been the case.

"The roads in the immediate vicinity of Smyrna are kept in a fairly good state of repair. This is more or less due to the iniative and energy of the British residents of Smyrna and the two suburban towns of Bournabat and Boudja. One enterprising Englishman practically built the road between Smyrna and Bournabat, a distance of five miles, and he gets the interest on the money invested and keeps up repairs by charging a toll on all vehicles which traverse the road. He is also the owner of the only automobile in Smyrna, a machine which he imported from Switzerland two years ago, but about the only place he can use it with any degree of enjoyment at least is on his own road between Smyrna and Bournabat. I am also informed that a second road is being built by him, in the same way, to connect the two suburban towns of Cordelio and Bournabat. It is therefore self-evident that the condition of the public roads in this part of Asia Minor will always militate against the use of the automobile in these parts, and it is extremely unlikely that this country will ever offer a market for these machines.

"The general make-up of Turkish cities and towns also acts as an obstacle against the introduction of automobiles. The streets, apart from being narrow and winding, are paved with cobblestones and are extremely rough. This primitive pavement is gradually being replaced by flagstones, with which all principal streets are now laid. Unfortunately the preparation of the roadbed prior to laying the flags is so insufficient that within six months a newly paved street is practically in need of repair. It is hardly to be hoped that conditions in the road and street line will soon change in Turkey."

Club's Work for Good Roads.

At its annual meeting at Lansdowne, Pa., last week the Delaware County Automobile Club announced that it had done much for the betterment of roads in the county during the past year, and would work with the supervisors for a continuation of the good work next year. Although organized only a year ago the club now has 150 members and is in a flourishing condition financially. The officers elected at the annual meeting are: President, J. H. Weeks, Rutledge; vice-president, W. P. Anthony, Eddystone; treasurer, J. E. Mitchell, Glenolden; secretary, Dr. E. M. Harvey, Media; auditors, A. H. Tomlinson, Dr. Miller and J. D. Wood.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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Development of the Railway Motor Coach

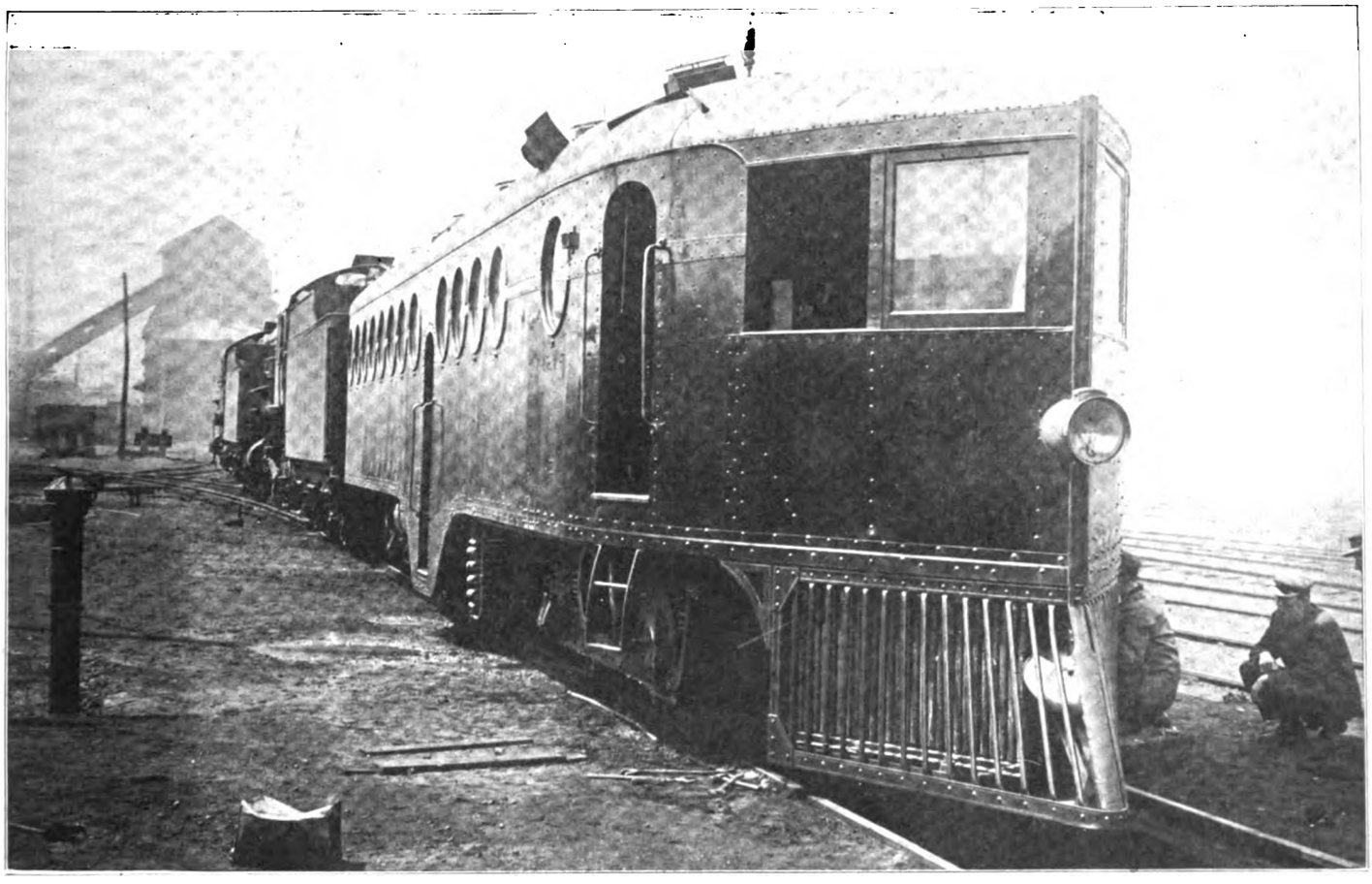
Probably no factor has offered a greater chance for railroad service, in such a short length of time, than has the gasolene engine. The modern locomotive, with high steam pressure and the attendant flue and fire box troubles, the troubles due to formation of scale, broken staybolts, leaky front ends, defective draft, poor coal and kindred necessary evils incidental to the use of a separate power generating unit, such as a boiler entails, is a much more complicated and vulnerable piece of machinery than the gasolene motor car. The complicated generator with its attendant multitudinous parts that are like to get out of order is absent in the gasolene engine, so that it follows, that a gasolene motor car, properly constructed and built with the same care and skill as a locomotive, is much less vulnerable a machine than a locomotive and should give more continuous service without breakdowns.

To the theorist, at least, it always has appeared that while the advantage of the gasolene railway car for short hauls or on branch lines is self-evident and that it may permit two trains where one exists to-day, its possibilities even for long travel, particularly in the nature of "specials," or "limited fliers" or for private service, scarcely have been scratched. ,

It was due to the fact that although on many of its branch or interurban lines steam passenger lines are operated at a financial loss, the passenger service must be maintained notwithstanding, the Union Pacific Railway was led to experiment with the gasolene railway coach, and the man responsible for the experiment is W. R. McKeen, Jr., superintendent of motive power and machinery, at the Union Pacific's shops in Omaha, Neb., through whom the gasolene motor car has reached what may be termed a state of accomplishment.

Since Superintendent McKeen constructed the first experimental car in March, 1905, the Union Pacific Railroad has built thirteen gasolene motor cars, each of which has been an improvement on its predecessor and has pointed the way to greater things. This railroad has thoroughly demonstrated the practicability of the gasolene coach for railway purposes to such an extent that twenty-two additional cars are in course of construction.

From time to time since the first one was built spasmodic reports of its performance have found their way into print, but it was not until this week when the Union Pacific itself issued a beautifully printed



ONE OF THE UNION PACIFIC'S GASOLENE MOTOR CARS

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and illustrated brochure on the subject, that a full and sufficient story of the development of the cars and of the "gasolene service" became available.

First Car an Experiment.

The first car built, No. 1, was an experimental car, thirty-five feet in length, mounted on a single four-wheel truck, the wheels of which are 42 inches in diameter. The weight of No. 1 is a trifle over twenty tons. That car was turned out of the shops during the last week in March, 1905. Before being tested in actual road service it was thoroughly operated and broken in around Omaha shops and vicinity, and during these tests the motor car was coupled to two passenger cars, a standard mail car weighing 52,100 pounds and a standard coach weighing 60,000 pounds. These cars were successfully started and accelerated, both on a descending grade and on a one-third per cent. ascending grade, the motor thus starting a total load of 152,100 pounds.

Pulling the mail car alone, a trip was made to South Omaha and return. This is up a 1.6 per cent. grade, which was ascended at the rate of 11 miles per hour, the total load pulled being 94,000 pounds. In another test the motor car successfully ascended a sharp grade of 7.8 per cent., or about 400 feet to the mile, the car being stopped and started repeatedly on the grade.

Its first long distance run, however, was inaugurated on April 2, 1905. Leaving Omaha at 10 a. m., the run was made west to Valley on the main line of the Union Pacific, a distance of 34.8 miles, and the performance was successful, especially on the return trip, when the schedule for ordinary passenger trains was maintained without effort. Leaving Omaha April 16th, the car made the trip entirely under its own power from Omaha, via Denver, to Portland, Ore., and return. Its most notable achievement on that trip was in climbing Sherman hill, the summit of the Rocky Mountains, after leaving Cheyenne; the steep grade is 27 miles long. Motor Car No. 1 went into regular service on August 21, 1905, making one round trip daily between Kearney and Callaway, Neb., a distance of 65 miles.

Standard Design Adopted.

Motor car No. 2 was then built. It is an all steel car of standard design for these cars, six similar to it already being in service. This car has two four-wheel all steel trucks; the driving wheels are 42 inches in diameter, the other wheels 33 inches. It is 55 feet long, and has a seating capacity of 57. The inside finish of the car is antique mahogany, the ceiling being cream white with decorations in gold and sepia, making a striking but harmonious contrast. The seats are finished in leather, with a semi-circular tufted seat, as in small launches, at the rear. Maroon, striped in gold is the exterior finish of the car, while the trucks are painted olive green.

With its steel sills and bracing, the steel car lines and ribs and the angle bracing and outside steel shell, the new car is one of remarkable strength, affording great safety to passengers in case of accident or wreck, as the structural design and strength of the car almost entirely precludes the possibility of telescoping. In line of design, the car body is similar to that of a racing yacht inverted, the front of the car being tapered off into a sharp point, and the roof being rounded off at the top, presents no flat surface for wind resistance. As the rear of the car is rounded off as well, the usual vacuum produced by flat end cars is avoided.

Ventilating and Heating.

The upper deck and the old-style sash ventilators have been entirely done away with, adequate and sanitary ventilation being secured by means of roof ventilators, which exhaust the air from the inside by suction, fresh air being taken from the front of the car, through the roof. By this method a complete change of air can be secured every four minutes, if desired, and the unsanitary atmosphere condition so often encountered in old style cars is entirely avoided. To further augment sanitation the floor of the car was made entirely water tight and can easily be cleansed by flushing with hot water, destroying all germs and disease.

Two ingenious systems of coils afford a perfect system of regulating the temperature inside the car. In cold weather heat is radiated to the interior of the car by running the water from the cylinder jackets of the engine around the sides of the car, and in warm weather this water is piped to coils immediately below the car. The acetylene gas lighting system is used, giving a powerful light for the headlight, and the lamps on the interior are provided with opalescent panels, producing a soft and at the same time a powerful light.

The car is equipped with air brakes of the direct system, with braking power on all wheels. Attached to the crank shaft is an air pump which supplies and maintains 100 pounds air pressure in two reservoirs of 41 cubic inches each. Numerous tests at a speed of twenty miles an hour have shown that the car stops in 112 to 115 feet, without inconvenience to passengers. To provide additional and auxiliary safety the car also is equipped with a ratchet lever hand brake.

Details of the Engine.

A six cylinder gasolene engine, built after special railroad patterns, designed to meet regular car service, and rated at 100 horsepower, is the power plant of this car. It has make and break ignition with a primary battery to start on and a magneto for regular running service. The cylinders are 8x10 inches, of the upright type, placed at right angles to center line of car. The six cylinders are arranged and connected up in opposed sets of three cylinders, resulting in three power giving pulsations at each revolution of the crank shaft. Air is used for starting the engine and a synchronizer facilitates and simplifies the changing of speeds. Immediately in front of the operator is the air brake valve lever and the emergency spark cut-out which enables him to stop the engine and apply full brake power in less than half a second. The clutches and controlling devices are all mechanical and of the simplest design. By means of a special chain the engine crank shaft drives direct onto the driving axle. The metal clutch operated by hand levers, which proved so successful on Motor Car No. 1, has been applied to No. 2, but is operated by air pressure, controlled by a specially designed operating valve, by means of which the car is started at slow speed, engine disconnected, or thrown into high speed at will.

The Capacity for Speed.

The cars are capable of a speed of from 40 to 60 miles an hour, the acceleration from a standstill to 300 feet is claimed to be superior to any electric car of the same horsepower, it being slower than any electric car for the first fifty feet, thus eliminating jerking in starting while the acceleration from 100 feet on is very rapid. On a level or one-half per cent. grade the car starts readily on high speed, directly connected without the use of gears; although on anything over one-half per cent grade, or with a heavy trailer, it is necessary to use the gear speeds. One operator is all that is necessary to operate the car, and it can be stopped and reversed at will, although designed to run in one direction.

Tested in Hill Climbing.

Motor Car No. 2 was tested as thoroughly as its forerunner and its initial official trip was made September 14, 1905, when the car ran from Omaha to Valley, Neb., a distance of 34.8 miles. On the westbound trip no effort was made to make a fast run. However, the distance was made in 1 hour 11 minutes, actual running time. Especially noteworthy was the performance of the car ascending Elkhorn hill, where the grade is 42 feet per mile. The hill was ascended at the rate of 32½ miles per hour. On the return from Valley the trip was made in 57 minutes actual running time, an average of 37 miles an hour, which was at one time increased to 52 miles. A week later the car made its second trip to Valley, and this time it averaged 39½ miles an hour on the west bound trip, which it increased to 30 minutes for a 25-mile run on the eastern trip, of an average of 50 miles an hour. Several miles of this run were made in 57 seconds, or 63.2 miles per hour, and mile after mile was accomplished at better than a mile a minute. Since October 6, 1905, No. 2 has been in regular service on

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the branch line between Kearney and Callaway, Neb., making one round trip or 130 miles daily, and on the branch St. Paul to Loup City.

Motor cars Nos. 3 and 4 are of the same general design and description as No. 2, except the former have baggage compartments. Cars 5 and 6 are the same as No. 2. No. 3 left Omaha November 10, and made the trip under its own power to Houston, Tex., and now is in regular service on the Southern Pacific, making the trip between Houston and Galveston. No. 4, after being turned out of the shop, made a trip to the Chicago and Alton road and was in service on that line out of Bloomington, Ill. This car also made the trip to Portland, and was in service there from April 16 to August 4, when it returned to Omaha, and since has been in regular service on the Kearney and Callaway branch, in conjunction with No. 2. Car No. 5 left Omaha January 5, en route to Los Angeles, reaching that place January 23. The distance from Salt Lake City to Los Angeles, 778 miles, was covered in less than four days, running eight hours a day. The car was tested on various lines and since its return to Omaha, was put on regular service on the Loup City-St. Paul line. No. 6 is in service between Leavenworth and Lawrence, Kan., making the round trip of 68.6 miles daily. The train consists of the motor car and trailer and is operated on the regular schedule of a steam train. These trailers are combination, baggage, mail and express cars, 31 feet long, mounted on a 4-wheel rigid truck, and weigh 18,000 pounds. The exterior finish is the same as that of the motor cars.

Improving the Design.

While Motor Car No. 7 is of the same general design as previous cars, it embraces some new features. The square design of the window has been done away with and the air, water and dust proof round window sash substituted. The sash is similar to the port hole of a steamer, and keeps out all the elements, which the double sash in the finest Pullman is unable to do. Car No. 7 has side entrance, doors being located near the center of the car. The passenger compartment is 41 feet long, with a total seating capacity of 75. The seats are built-up veneered wood seats, with seating capacity of three people each, while the semi-circular seat in the rear holds 11 people. The roof of motor car No. 7 is nine inches lower than in the other motor cars, and as the others are 15 inches lower than an ordinary passenger car, this makes No. 7 two feet lower than the ordinary coach. The interior of the car is finished in English oak. Its weight complete is 58,000.

On April 4, No. 7 made its initial trip to Valley and attained a maximum speed of 45 miles. It first long distance trip was made a week later, when it was run as second section of No. 1. The car gained on No. 1 to such an extent that at Fremont, 46 miles from Omaha, it had to be held on the block six minutes. The actual running time of No. 7 to Grand Island, 153.6 miles was 4 hours 32 minutes, an average of 34 miles per hour. Although a hot bearing was met with on the return trip the distance was made in 4 hours 10 minutes, averaging 36.3 miles per hour. A maximum speed of 53 miles an hour was attained on this trip. This car is now in service on the Erie Railroad.

Developments in the Engine.

The car body and trucks of No. 8 are similar in design to those of No. 7, and few changes have been made in the mechanical transmission on the front trucks from that used on previous cars, except to substitute steel gears instead of bronze. The engine proper was built in the Omaha shops. Its cylinder dimensions are 10x12, and is rated at 200 horsepower. The engine was particularly designed for motor car service with a view of overcoming the ordinary troubles experienced with gasolene motive power, the reliability of performance being an absolutely essential feature of the motor car service, where cars are operated in conjunction with and on the same track as steam locomotives. The engine is designed to develop a high percentage of horse power at the lower speeds with the express object of facilitating the acceleration of the car. It generally is claimed that a gasolene engine is a constant speed machine; the engine on No. 8 was especially developed with the idea of controlling the speed of the car by regulating the speed of the engine; the engine's speed being increased or decreased simply by opening or closing the throttle and regulating the spark. The speed of this car can be regulated by means of the engine alone, from two to 65 miles per hour. Although rated as 200 horsepower, the engine actually develops 230 horsepower.

Features of the Transmission.

The engine is directly connected to the axle, although it is preferable to use the gear in putting the car in motion, but after once in motion the gears are thrown out and the speed of the car entirely controlled by the speed of the engine. One special feature of this engine is that all parts have been given good liberal bearing surface, and the design, the patterns, the castings, the workmanship, all have been simplified to admit of material for repairs being obtainable at any ordinary repair shop. Another feature of this engine design is that the exhaust and inlet valves, the air valve, spark plug, valve stems, valve seats, and in fact, practically all the engine mechanism, is a part of the cylinder head, so in case of trouble, with any one part, or breakage, repairs are greatly facilitated by applying a new cylinder head complete, while the old one can be sent to the shop for detail repairs. Thus the life of the engine is indefinitely extended. The car weighs 61,000 pounds, and is finished in Cuban mahogany. Ventilation is obtained from the use of the air intake and the Cottier exhaust ventilators. Motor Car No. 8 went into service between Lincoln and Beatrice, Neb., in September, 1906, making round trips daily, and since that time has failed but once. So successful has its work been that 22 additional cars of the same design now are being constructed by the company at the Omaha shops.

Numbers 9, 10, 11, 12 and 13 have been placed in service out of Denver, Col. The engine of No. 12 was tested out with a hydraulic brake test and developed 250 horsepower at 500 revolutions per minute. No. 9 has a special engine developing 100 horsepower. These cars all run 60 miles an hour and some of them at a speed of from 65 to 70 miles.

Severe Endurance Test.

The endurance test of No. 12 was one of the severest ever accorded gasolene motor cars. Previous to starting on the trip to Denver, August 22, it had made only two trial trips, and there was some question about sending it on such a long trip without a more thorough tryout. But the designer was sanguine and the car proved its worth, making the trip of 586 miles in 16 hours 34 minutes; the running time of the Colorado Special is 17 hours 15 minutes. On July 29, 1907, the car was tested out more thoroughly, hauling successfully back and forth over the same track ten empty freight cars. Two days before that Car No. 10, under the same conditions that a locomotive would operate, placed a 40-ton carload of coal up the incline of coal chutes at the Omaha shops.

Adjusting Shock Absorbers.

In adjusting shock absorbers it is absolutely essential that those applied to opposite sides of the frame upon either end be given the same tension. The sets applied at the front and rear ends of the car may be differently adjusted without injuring the chassis, and frequently, where the load is unevenly distributed or the springs are not properly proportioned, this may be done to considerable advantage. Where opposite absorbers are differently tensioned, however, the tendency is for the chassis to be racked and strained under usage, exactly as would be the case were springs of different strengths to be applied in the same way.

Motor Mail Wagons a Success.

Use of automobile mail wagons for collection purposes has proved a great success in Milwaukee, where the expreiment was first tried. Since their installation the cars have traveled more than the distance around the globe. During the eight months they have been in service Milwaukee's motor mail wagons have covered 28,000 miles in congested streets, and the mail service in that city has been greatly facilitated by their use.

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HACKENSACK'S FLORAL DARADE

Many Beautifully Decorated Cars in Line—President Roosevelt in the Louisiana Jungle One of the Features.

Historical Hackensack, N. J., mentioned in all entomological works on account of its mosquito producing meadows and in Jersey guide books as the home of great commutors, to say nothing of the fact that George Washington once visited "in its midst," had reason to be real proud and harbor a welcome-to-our-city-and-peace-be-with-you feeling last Saturday, 19th inst. Automobiles gave the old town a new experience to talk about. More than forty gayly decorated machines, all displaying evidences of originality of design and artistic taste, paraded through the main thoroughfares of the town and competed for prizes. The parade, crystalized into an actuality by the Bergen County Automobile Club was, beyond peradventure, one of the most successful and pleasing of the year.

The club offered three prizes—for the first and second best decorated cars and for the most unique creation—and as two-thirds of the judges were local ministers, there could be no question over the result. The procession formed in front of the green at the historic Mansion House, where there is a tablet marking the spot where George Washington had his camp during the Revolution. As the two ministerial judges, not to cast any reflections on the other judge who was not a reverend divine, stood directly in front of tablet-reminder of the veracity of the Father of Our Country and Hackensack, N. J., every one could see that the decisions must be just. But all thoughts of georgemcohan—beg pardon, Washington, were relegated to the archaic past. President Roosevelt and his bear-slaying propensities were in the ascendency, depicted most forcfully by the decorations in H. M. Bogert's Pope-Toledo, which was a minuature Louisiana jungle, with the president himself, represented by the driver, attired in regulation hunting togs and a rough rider hat, at the wheel, and beside him a negro guide holding aloft the standard "which bore this strange device"—"Delighted!" A big teddybear, one that the president didn't bag, played hide-and-seek behind a small tree.

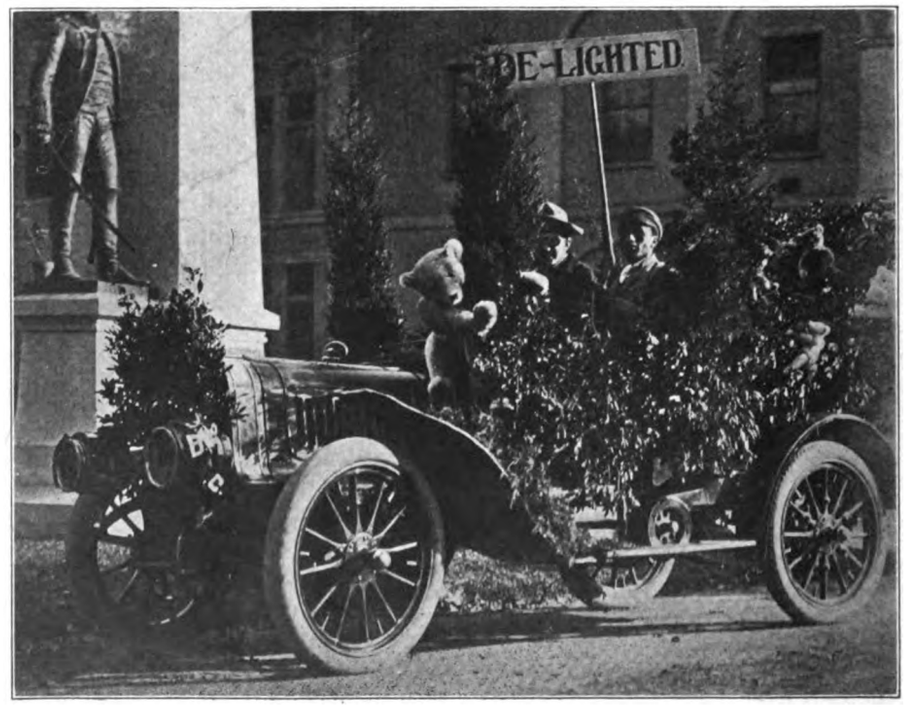


WINNER OF PRIZE FOR BEST DECORATED CAR

Mayor Courtland Linkroun headed the parade. Just behind came Frank Ackerson's car that won first prize. A canopy richly adorned with white lilies was erected over the car, its sides enclosed with green lace. A large white teddybear was seated on the bonnet and the wheels were green rosettes. Totally different was Joseph M. Diaz's ackard, which was accorded second prize. Against a solid background of black were wreaths of yellow chrysanthemums, while Mr. Diaz's little daughter sat in the middle of the car holding long yellow driving reins. It was no easy task to pick the most uniquely decorated car. The judges picked Mrs. W. A. Atwood's Maxwell, though some thought the prize should have gone to the Louisiana "jungle" and "President Roosevelt." Mrs. Atwood's car bore a huge sign, "Country Pumpkins," and on every available space was attached big Bergen county pie fruit. Where there wasn't room for a pumpkin yellow hollyhocks concealed the bare spots.

Wilson Heads Houston Club.

The Houston (Texas) Automobile Club has elected the following officers for the ensuing year: President, Harvey T. D. Wilson; vice-president, C. H. Dunbar; secretary, S. E. Bering; treasurer, J. W. Thiel; governors, C. G. Pilot, Colonel Thomas J. Anderson, Douglas Burnett and O. J. Lorehn.



"PRESIDENT ROOSEVELT IN LOUISIANA JUNGLE"

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STRANG CUT OLDFIELD'S FIGURES

Did a Mile in 51¾ Seconds at Birmingham—Meet Unsanctioned and Record May Not Stand.

Walter Christie will doubtless realize that it is better to travel alone than in bad company. On Wednesday last, 16th inst., at Birmingham, Ala., Christie's racing car broke the world's mile track record in 51¾ seconds, but as the time was made at an unsanctioned meet, and one that was promoted by William H. Pickens, a suspended promoter, who acts also as Christie's business manager, it is not likely that the time will be accepted, although application has been made for a post-sanction from the American Automobile Association. The amusing part of the affair is that sanction was not applied for until after the time was made in order to make it an official record, a dodge of a publicity promoter that undoubtedly will fail in its purpose. In addition, Strang will probably be shelved for some time from future sanctioned competition as this is his third offense, the first being at Nashville, and the second at Atlanta.

The meet was arranged by William H. Pickens, under suspension by the American Automobile Association; and Homer George, a New York publicity man, who once lived in Birmingham, and it was carded as the feature of the Alabama State Fair. So far as the Motor World can learn the other drivers, besides Strang, who made themselves open to suspension by competing at the meet, are John Fahey, a 12-year-old Birmingham boy; W. T. Harrison, Charles Denegree, and another local driver named Wood.

According to Birmingham reports more than 5,000 people were in the grandstands when Strang came out for his record trial. The circular mile track is one of the best in the country and was in excellent condition, except perhaps a trifle dusty. Strang has nerve and plenty of it, for he steered the front drive racing car around the circular track in 51¾ seconds; the record for a mile track is 52 seconds, held by Barney Oldfield, who now also is under investigation by the racing board for having promoted and competed in unsanctioned track races.

After this Strang drove three miles in an attempt to lower the local record of 3:45 set up by Oldfield on the Birmingham track last year. Strang was successful as the timers clocked him at 3:03.

Charles Denegree won the "amateur championship of the State," his time for three miles being 4:33. The three and a half mile pursuit for Franklin cars was won by Wood in 6:29. John Fahey, a 12-year-old youngster, finished second. W. T. Harrison finished first in the four mile Cadillac handicap, covering the distance in 6:41.

Prize Winners in Malden Parade.

With 65 cars participating, and most of them decorated, the first parade of the Malden (Mass.) Automobile Club last Saturday, 19th inst., was a pronounced success. The route of the parade covered 15 miles, and of the 65 starters, 59 completed the run and drew up in front of the judges' stand for the award of prizes. For the best decorated touring car Charles W. Small of Malden took the prize. His car represented the battleship Illinois, with members of the party in full dress naval uniform. Second prize was awarded to James W. Wilmot. First prize for undecorated cars went to J. W. Maguire, and second to Willard E. Robinson. Miss Guptill won first prize for decorated runabouts, and second was accorded Dr. C. C. Burpee. In the undecorated division of this class, first and second were awarded respectively to Willard E. Robinson and Miss Chamberlain. Malden and Melrose Gaslight Company's truck won first prize for commercial vehicles, second going to Gerald A. Sullivan.

New Boston-New York Record.

Ray McNamara and George Preston of Boston took chances with the police last Thursday, 17th inst., and succeeded in seting up a new record from Boston to New York and return. Allowing 36 minutes for luncheon in New York the round trip was made in 22 hours 59 minutes actual running time. McNamara and Preston started from Boston in a 4-cylinder 24 horsepower Premier car at 3:58 a. m., and arrived at Columbus Circle, New York City, at 1:51 p. m. Before leaving Boston both bonnet and high speed gears were sealed and these seals were intact when the car arrived in New York City, and also when it got back to Boston. On the return trip to the Hub McNamara and Preston left New York at 2:28 p. m. and were checked at Boston the following morning at 3:34 o'clock, making the elapsed time fo rthe round trip 22 hours 59 minutes.

Electric Car Makes 100-Mile Run.

A road run of 101⅛ miles in a stock Columbus-Stanhope electric car was the stunt performed by Charles S. Henshaw of Boston, Thursday last, 17th inst. Henshaw started the trip from in front of the State house in Boston at 9.30 a. m., Thursday, followed by a car containing observers. The route was through Charlestown, Chelsea, Revere, Lynn, Swampscott, Phillips Beach, Salem, Beverly, Pride's Crossing, Manchester, Magnolia, and Gloucester. The run to Gloucester, 35 miles, was made in three hours. A slight detour was made on the return trip which made the total mileage back to Boston 74.7 miles. Continuing, Henshaw rolled his mileage up to 101⅛ miles before the current was exhausted.

KULICK DEFEATED BY DISASTER

Badly Hurt at Detroit in Attempt to Make New Mile Record—His Car Turned Three Somersaults.

Frank Kulick, of Detroit, who has gained prominence through his connection wtih Ford interests by driving its cars in races, was seriously but not fatally injured while attempting to break the world's mile record at the State fair grounds track, Detroit, Friday afternoon last, 18th inst.

For some time Kulick had been privately testing the new 120 horsepower six-cylinder Ford racer and when it was unofficially timed at 49 seconds for the mile, Henry Ford decided to obtain sanction from the American Automobile Association for an official trial.

Kulick had been burning up the track for fifteen or twenty minutes at 52 and 53 seconds to the mile, when he made ready for the mile trial. The timers got their watches ready as Kulick let the big car out and came thundering down the stretch for the start. A second later the car skidded on the lower turn and plunged through the wire fence, turning over twice before it landed bottom up. Kulick was hurled some distance away and was conscious when the spectators reached him, although he was hysterical.

There was some delay in securing a hospital ambulance to come out of the city limits so Mr. Ford directed that the rear tonneau of his touring car be cut out to make room for a stretcher with Kulick upon it to be placed within. Then he was taken to a hospital where it was discovered that his right knee cap is split and the right femur broken in two places, near the middle and near the knee joint. He also sustained contusions along the spine, shoulders and back of the head, but the doctors promise recovery, although it will be some weeks before the injured man can leave the bed. The car was partially wrecked. According to local newspapers Mr. Ford declared that he will never build another racing car.

Delevan Owners Form a Club.

The Delevan Automobile Club, of Delevan, Ohio, was organized last week with the following officers: President, E. M. Wayne; vice-president, C. B. Wood; secretary, Dr. G. W. Fockler; treasurer, Daniel Crabb. The club starts with a membership of nineteen, and plans to hold a race meet soon.

The Automobile Club of Buffalo, N. Y., claims to be the largest local organization in the world. At its meeting last week it admitted 96 new members, which brings the total membership up to 1,023.

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BLOWS HER HORN WELL, AT LEAST

Chicago's Professional "Chauffeuse" Lists Her Qualifications—She Claims Superiority for Women as Drivers.

Are women professional chauffeurs discriminated against because of their sex? Offhand, this question seems easy to answen because the feminine chauffeur is as yet a rarity in this country, but when Marys and Roses and Angelines become as common in the chauffeur's seat as mere Johns, Jameses and Henrys, they no doubt will be discriminated against by the opposite sex to the same extent that women have always been discriminated against when entering upon the vocations generally followed by species of the genus homo. But that is not the question.

There is a feminine chauffeur, or perhaps, chauffeuse would sound better, in Chicago against because she wears her hair long and skirts, and not because she hair long and skirts, and not because she lacks any of the essential qualities that go to make a good knight of the steering wheel. She is Kathryn Lockwood, who worked for some time in Los Angeles as a china painter, and went to Chicago, announcing that her sobriety should qualify and land her a job as a professional chauffeur. Miss Lockwood found that her chosen professional career was not a palm-girt boulevard in Chicago, at any rate, so she has written to a good friend on her home paper, pleading the advantages of her sex so well that she should get a position as Lady of the Steering Wheel very quickly. In part, this chauffeuse is quoted as setting forth her position thus:

"I am only waiting an opportunity to demonstrate to the public in general that women will be as great a success in the automobile trade as we have proven to be in other lines of business. The advantages in having a woman driver are:

"Cautiousness—A natural quality of a woman, and the first requisite of a good chauffeur.

"Cleanliness—A clean machine will last twice as long as one which is allowed to go with only the sides and tires washed. In cleaning a machine thoroughly every day, bolts and nuts just working loose are found and tightened, saving the chance of breakdown. Cleanliness is a prime natural quality of women.

"Frugality—A natural quality of women, very helpful to the owner of the automobile.

"Good Habits—Many more reasons could be named, but none which would be better recommendation than this. Men drink and smoke, and both are against a chauffeur.

"Why is it that I am discriminated against, simply because I am a woman? If I can do the same work and give more satisfaction than a man, why not give me a trial?

"I am willing to go on any tour, or ride in any race—I will, in fact, go any place on the globe than an automobile will go. I am a good talker, a good saleswoman, and I can repair and run both automobiles and motor boats. I would prefer a position as a demonstrator with some firm, but I will take work in a public garage, in a private family, or I will drive a commercial truck, I will take entire charge of my car, keep it clean, and do all my own repairing. I am not afraid of hard work.

"All I want is an opportunity to prove my ability in my chosen profession. I am ready to furnish references. Is there any one in California who will give an energetic, ambitious woman a chance to make good?"

Incidentally, Miss Lockwood emphatically states that she will not discard her skirts for masculine raiment.

Made Angry by Red Ink.

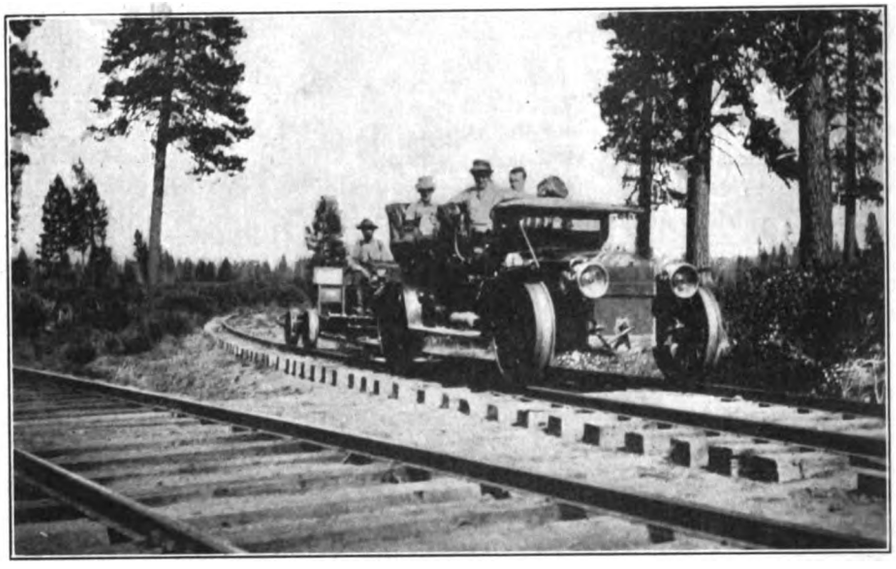
Another Philadelphian has made a tilt against the New Jersey department of motor vehicles, and after December next may have to find an automobile route between the Quaker City and New York which will keep him outside of the intervening State. The "blood on the face of the moon" consists of red ink used in endorsing a letter returned to Dr. Lewis H. Adler, of Philadelphia, for correction of a clerical error in the application for a renewal of his driver's license.

Dr. Adler was angered by the ruby endorsement, regarding the use of red ink as an insult. Accordingly he wrote a letter to that effect, requesting the return of his $3, sent in the previous letter, unless an apology were made. Commissioner Smith returned the money. In place of an apology Dr. Adler received notice to appear before the department to show cause why his license should not be revoked.

AUTOMOBILE FOR ROAD OR RAIL

How an Ingenious Californian Avoids Poor Highways—His Car Can be Adapted Quickly to Railway Travel.

Without suitable roads on which to run an automobile, most men would give up the idea of operating a machine, but S. O. Johnson, of McCloud, Cal., refuses to be deterred by any such difficulty. His business requires him to make extended tours through the timber country, many parts of which are impassable for a motor car. When he encounters a stretch of the latter sort,



TOURING CAR FITTED FOR RAILWAY TRAVEL

he fits a special set of railroad wheels to his Thomas Flyer, as shown in the picture, and takes to the railway tracks. The work of fitting the special wheels seldom takes more than half an hour, and the car so equipped is capable of the speed of the fastest "limited" that travels in that part of the country.

"Joy" Ride Led to Sorrow.

Harold Crawford, a 17 year old Buffalo lad went "joy riding" one night last week; now he wishes he had not. For a long time Harold's "lady friend" has been beseeching her youthful lover to take her automobile riding, and although Harold did not possess a car or the requisite hire of one the appeals became so strong that he cast discretion to the four winds and made off with Police Commissioner Zeller's car. He had taken his "lady friend" for a ride and was returning when the police nabbed him.

Automobiles have been barred from the parks, boulevards and lawn extensions of Ann Arbor, Mich. The city council met last week and passed an ordinance which has that effect.

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SEE THE LOGICAL RIM

At the NEW YORK SHOWS



THE

1908 UNIVERSAL MIDGLEY RIM

DEMONSTRATIONS

OF THIS THE ONLY TWO PART UNIVERSAL RIM

At the Booths of

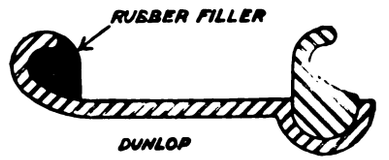
MORGAN & WRIGHT
HARTFORD RUBBER WORKS CO.
THE G & J TIRE CO.
THE MIDGLEY MFG. CO.



SOLE MANUFACTURERS

THE MIDGLEY MFG. CO.

COLUMBUS, OHIO



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The Week's Patents.

863,403. Speed Indicator. Carl Knopf, New York, N. Y. Filed Jan. 10, 1907. Serial No. 351,645.

1. A speed indicator, comprising a casing having an inclined front wall, a vertical shaft within the casing, an inclined shaft within the casing and mounted substantially parallel to the front wall, bevel gearing connecting said shafts, centrfugal means carried by the inclined shaft, a longitudinally movable rod connected to said centrifugal means, an indicator adjacent to the inclined front wall, and means whereby movement of the rod causes a corresponding movement of the indicator.

863,406. Motor Vehicle Actuated by Friction Gear. Josef E. Labus and Gustav J. Schreiber, Vienna, Austria-Hungary. Filed March 13, 1906. Serial No. 305,791.

1. In a motor road vehicle actuated by friction gear, the combination of a vertically arranged motor provided with cooling ribs and seated in the fore part of the vehicle with its shaft parallel to the wheel axles, fiywheels on the ends of said shaft, fans operatively connected with the flywheels, one of said flywheels being disc-shaped, and a friction wheel adjustably arranged across the face of said disc-shaper flywheel, substantially as described.

863,449. Valve. Charles G. Richardson and Frederick N. Connet, Providence, R. I. Filed March 6, 1905. Serial No. 248,439.

1. In a device of the character described, the combination of a valve seat, a valve, a stem, a spring, and a locking device upon the stem including a collar to form an abutment for the spring, means engaging said stem to prevent the accidental removal of said collar therefrom, said engaging means being itself normally held from removal from said stem by engagement with said collar, and means whereby said collar may be withdrawn from said engaging means and locked to the stem against an endwise movement to permit the removal of said engaging means from said stem.

863,488. Vehicle Tire. Joseph Allend, Philadelphia, Pa. Filed March 19, 1906. Serial No. 306,707.

1. The combination of a wheel rim having a peripheral channel therein, a resilient tire within said channel and having an interior diameter greater than the diameter of the base of the channel, a retaining ring extending through the tire radially arranged bolts engaged with said ring and extending through said rim to retain the tire within the channel, a pair of spring rings laterally of said bolts and of greater diameter than the diameter of the base of the channel and engaging said tire, and means arranged at intervals around the tire to prevent movement of said rings toward the base of the channel.

863,516. Carburetter. William E. Downing, Des Plaines, Ill. Filed Nov. 16, 1905. Serial No. 287,705.

1. In a carburetter, the combination of a casing having a valve controlled inlet disposed centrally of its bottom and having an annular groove in the upper side of said bottom and provided with radial openings in the outer edge portion of said bottom in communication at their inner ends with said annular groove, and a valve of approximately frusto-conical form having an inwardly extended flange to rest upon the bottom of the casing and normally close the upper sides of said annular groove.

863,539. Wheel Tire. Adoniram J. James, Houston, Tex.. Filed Dec. 26, 1905. Serial No. 293,303.

1. A device of the character described, comprising a bridge-piece forming a tire-splicing member and having a longitudinal groove in its underside; inward extending lugs projecting from the tire and having ribs entering said groove, series of removable "riders" adapted for insertion between said bridge piece and tire ends, tightening means between said lugs, and securing means between said bridge piece and said tightening means.

863,565. Vehicle Spring. Joseph H. Athons, Los Angeles, Cal., assignor to Joseph Lawrence Pike, Los Angeles, Cal. Filed Feb. 20, 1907. Serial No. 358,516.

The combination with an axle, of a spring seat thereon provided with a hole, a plate provided with a stud exgaging in the hole, and also provided with countersunk bolt holes, the countersink being on the same side of the plate with said stud, said plate being also provided opposite the stud with an indentation, superposed spring leaves on said plate provided respectively with interlocking indentations and bosses, the lower leaf being provided with a boss to engage the indentation of said plate, a plate on top of said leaves, the same being provided with bolt holes, bolts in said countersunk bolt holes and in the holes of the upper plate, nuts on said bolts, said bolts engaging the edges of the spring leaves, bolts through the top plate and spring seat, and nuts on said bolts.

863,604. Power Driven Vehicle. John A. Herzog, Toledo, Ohio, assignor to The De-Luxe Motor Car Company, Detroit, Mich. Filed Dec. 7, 1906. Serial No. 346,723.

1. In a driving axle of floating shaft type, the combination, substantially as set forth, with the depressed beam and the axle arms thereof and the equalizer casing supported by the beam, of guard tubes having their outer ends in abutting connection with the inner ends of the axle arms and having their inner ends clamped to the outer ends of the equalizer casing, whereby the equalizer casing and tubes form a strut in the axial line of the general construction.

863,639. Friction Clutch. Nicholas M. Powell, New York, N. Y., assignor of one-half to Lewis G. Young, New York, N. Y. Filed Dec. 22, 1906. Serial No. 349,203.

1. A clutch comprising a casing, a drum in said casing provided with a shaft which extends beyond one end thereof, a friction member constructed to fit the outer periphery of said drum, a clamping member the end of which is operatively connected to said casing, said friction member being free to slide relative to said drum and clamping member, and means for tightening said clamping member on said friction member and thereby forcing said friction member forcibly in contact with said drum.

863,640. Friction Clutch. Nicholas M. Powell, New York, N. Y., assignor of one-half to Lewis G. Young, New York, N. Y. Filed Dec. 19, 1906. Serial No. 348,511.

1. A clutch comprising a casing, a drum in said casing provided with a shaft which extends beyond one end thereof, a friction section external to said drum, clamping members hinged at one end and external to said section and drum, said friction section being movable circumferentially on said drum and relative to said clamping members, a crank connecting said members at their opposite ends, and provision whereby the crank can be moved to either contact or relax the clamping members to cause the friction section to engage or become disengaged respectively from said drum.

863,680. Power Transmission Device. Edward P. Warner, Chicago, Ill., assignor, by mesne assignments, to Warner Clutch Company, a Corporation of Illinois. Filed Nov. 3, 1906. Serial No. 341,921.

1. A power transmission device comprising a revolving driving member, and a revolving member whose axes align, a series of two or more independent and disconnected circumferential bands connected to one of said members, and means for causing said bands seriatim, to frictionally engage the other member.

863,689. Armored Pneumatic Tire. Henry W. Avery and Wallace S. Judd, Cleveland, Ohio. Filed Feb. 3, 1905. Serial No. 243,-920.

1. As a new article of manufacture an armored tire sheath having embedded in it a spirally wound protecting member whose edges overlap to present a double protection and allow easy telescoping of the parts, the tubular sheath being flattened and curved transversely and longitudinally to correspond to the tire.

863,739. Carburetter. Harry B. Maxwell, Rome, N. Y. Filed Oct. 9, 1905. Serial No 281,871.

1. The combination in a carburetter of a float chamber having an axial passage through the same, a valve located in aud arranged for throttling the said passage at two points, a carbureting nozzle arranged within said passage between the two throttling points and communicating with the interior of the float chamber, means for supplying carburetter fluid to the float chamber, a float, and a valve controlled by the float and controlling the supply to the float chamber, substantially as set forth.

863,916. Speed Regulator for Internal Combustion Engines. Jules Grouvelle and Henri Arquembourg, Paris, France. Filed Sept. 24, 1902. Serial No. 124,649.

An internal combustion engine, having a conduit to supply it with combustible fluid, means for throttling said fluid, a diaphragm and diaphragm chamber, the latter connected with the suction of the engine for producing a partial vacuum in the said chamber, means between and connecting the diaphragm with the fluid throttling means, whereby the former controls the opening of the latter, and means for admitting air to the diaphragm chamber at will for regulating the pressure on the diaphragm, said last named means comprising a pipe open at one end to the atmosphere and at the other end to the diaphragm chamber, a valve device in said pipe consisting of a piston valve which is slidable and axially rotative, and which has axial and transverse ports, the spring which holds said valve normally open, the stem of said piston valve, and means carried by said stem for imparting both a slidable and rotary motion to the valve.

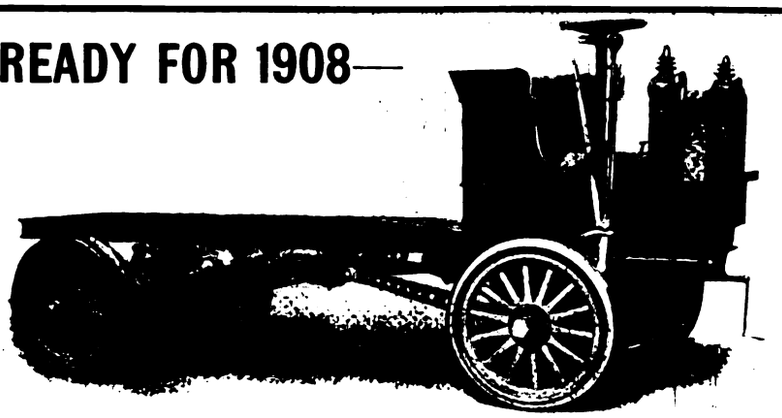
WANTS AND FOR SALE.

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—A 1906 Mercedes, 35 h. p., fully equipped with two tops; car cost $12,000. Will accept any reasonable offer. Legitimate reason for selling. Address A. J. KING, 238 N. Broad St., Philadelphia.

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READY FOR 1908—



The Logan
Model S Three-Ton Truck

A Truck which represents the best thought of the oldest and biggest plant in America devoted to the manufacture of commercial motor cars. Strong, simple, dependable, built of the best material by the best mechanics, this truck will give good service every day, year after year.

Write for Detailed Description to

THE LOGAN CONSTRUCTION COMPANY
CHILLICOTHE, OHIO



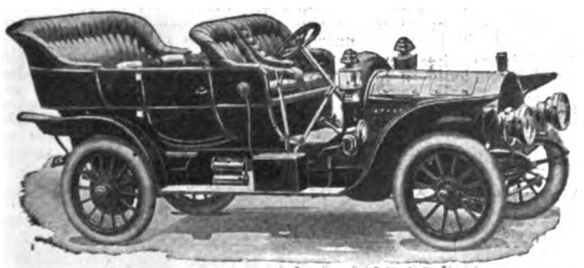
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by having your car equipped with
COLUMBIA LOCK NUTS

They do not shake from the bolt.

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No 79 MADISON SQUARE GARDEN

Columbia Nut & Bolt Co. General Offices and Factory, Railroad Ave. near Bostwick Ave. BRIDGEPORT, CONN., U.S.A.

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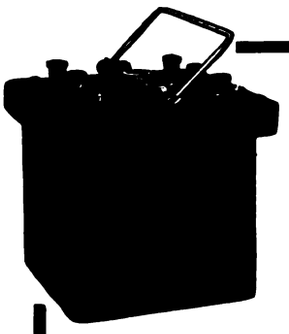
THE BEST WAY TO FIND A GOOD THING IS TO LOOK FOR IT × WE HAVE A FIND IN THE AURORA RUNABOUT AT $700 AND $775. WILL YOU LOOK?

AURORA MOTOR WORKS
AURORA - ILL -

THE ANNOUNCEMENT
OF
Columbia
Electric
and Gasolene Models
For 1908

Will be made during the next two weeks.
It will be of absorbing interest.

ELECTRIC VEHICLE COMPANY, Hartford, Conn.
Member A. L. A. M.



An Industrious
Ignition System

Manufacturers who have "tried out" the

Battery Witherbee

KNOW that its use means new life to the car, means less cost of "up-keep," means perfect ignition.

The Witherbee is not a "drone"—it does not go to sleep or forget.

Write department 20 for catalogue.

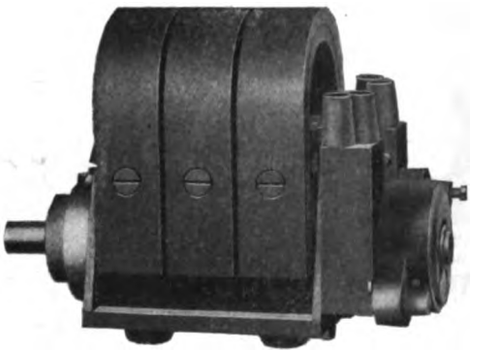
Will exhibit at Grand Central Palace Show, Oct. 24-31, and Madison Square Garden Show, Nov. 2-9.

Witherbee Igniter Company

THREE FACTORIES.

New York, 541 W. 43d St. Detroit, 220 Jefferson Ave. Chicago, 1429 Michigan Ave

Baltimore Office: 510 Continental Trust Building.



Remy Magnetos

which have become so well known to the automobile world and which have gained such great favor among their many users, are now being manufactured in the best equipped plant in the world devoted to the exclusive manufacture of Magnetos. This new factory, a model from the standpoint of efficient arrangement and high class equipment, together with perfected designs which are the results of years of experience in this line of manufacture, makes possible the turning out of the very highest grade ignition apparatus on the market.

For 1908 our line includes a new high tension Magneto without coil, which we build in large quantities and are selling at a medium price. It is simple, small and well made. It can be installed with minimum expense and is a high grade equipment in every respect. We also build Magnetos with coils for double ignition, and alternating and direct current Magnetos for all ignition purposes. It will pay you to investigate our Magnetos before deciding upon your ignition equipment for your 1908 cars.

We will exhibit at both New York Shows and the Chicago Show.

REMY ELECTRIC COMPANY
ANDERSON, INDIANA, U. S. A.

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The Ford

at the
Palace Show
fires a shot
that will be
heard around
the
world—then
the whole
Ford battery
gets
into action.

Ford Motor Co., 259 Piquette Avenue Detroit, Mich.

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EISEMANN-LAVALETTE

High Tension Magnetos



When a manufacturer equips with Eisemann-Lavalette Magnetos it means that he considers his cars equal in class to the highest grade foreign cars, although there may be a wide difference in price.

The greatest cars of Europe use Eisemann-Lavalette Magnetos exclusively. The Peerless, Packard and other leading American cars equip their entire output with our magnetos and freely admit that it is in a great measure due to the perfection of our instrument that the running qualities of their cars have brought them to their present remarkable popularity.

Magnetos are as permanent an integral part of the motor car construction to-day as pneumatic tires.

The question then is—which magneto?

The answer is—the Eisemann-Lavalette.

The Eisemann-Lavalette, in spite of its admitted superiority, costs, with dual ignition, $50 less to install than any competing make, because of its mechanical points of extreme simplicity, which cannot be duplicated without infringing our patents.

It does away with the cumbersome necessity of placing a timer on the motor with all its attendant wiring complications and expenses. It gives a greater increase in efficiency than any other magneto on the market. It is the most durable instrument of this sort, and it will outwear any car on which it is installed. It is perfect in the matter of timing. This means that it lengthens the life of the motor to a remarkable degree, gives perfection of service under all conditions, which can be obtained in no other way, and is as much a factor in strengthening the performance, and, consequently the reputation of the car as any other one point in its construction.

The strongest point an automobile sales agent can make in offering a 1908 car to the public is the statement that it is equipped with an Eisemann-Lavalette Magneto.

If you make a moderate price car, say $2,000 or $2,500, the use of our magneto will at once class it as a leader at that price. It will enable your agents to give demonstrations fully equal to a $4,000 or $5,000 car, provided the difference in horse power is not too great. It will mean an enormously increased demand for your cars in 1909, with no effort to yourself, and it will also mean that the best automobile agents will be more apt to solicit making connections with you on your own terms. They know the value of our instrument and we are taking strong steps to see that they do not forget it.

The Eisemann-Lavalette Magneto carries its coil in a separate box, thus providing ample space for a heavy thickness of insulation. The space is so ample that we would increase this insulation provided there was any advantage to be gained by it. Barring accidents, it is impossible for short-circuiting to occur. In the very rare cases where short-circuiting has occurred it has been a matter of slight expense and a few minutes of time to install a new coil in this separate box, thus making the instrument absolutely as good as new. When short-circuiting occurs in this separate box, which is a safe distance from the armature, the magneto is entirely unaffected.

In competing makes, which claim to be as good as the Eisemann-Lavalette, the coil is carried in the space inside the armature. This space is so small that the insulation is, of necessity, very thin and inadequate. With inadequate insulation short-circuiting is bound to occur sooner or later, and when it does occur the entire magneto is out of commission and must be replaced by a new instrument or sent to the factory for repairs.

When you sell a man a car equipped with an Eisemann-Lavalette Magneto you can guarantee him freedom from ignition troubles. Our guarantee to you stands behind yours. By using our instrument you greatly reduce his cost of upkeep.

Are you dissatisfied with your present ignition system? We have engineers, specialists in WHAT YOU WANT TO KNOW. We will gladly send one to you to work out your ignition problem for you. Better still, come and see us at the automobile shows. We are exhibiting at all of them.

Grand Central Palace, space F. Madison Square Garden, spaces 120 and 121.

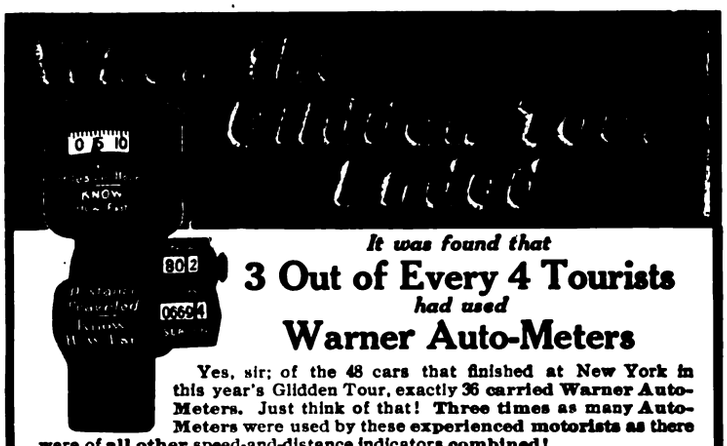
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¶ Why Solar Gas Generators Always Satisfy. ¶ Because they embody the only correct principle of gas generation (wick feed) making flooding impossible. ¶ Aremade round so as to enable each part to be drawn from one piece of heavy sheet brass (not four pieces soldered together). ¶ This absolutely removes the possibility of leakage and produces a steady supply of never failing gas.



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It was found that

3 Out of Every 4 Tourists
had used
Warner Auto-Meters

Yes, sir; of the 48 cars that finished at New York in this year's Glidden Tour, exactly 36 carried Warner Auto-Meters. Just think of that! Three times as many Auto-Meters were used by these experienced motorists as there were of all other speed-and-distance indicators combined!

This sweeping victory for Warner Auto-Meters, followed last year's equally creditable performance in the Glidden Tour, and the recent notable triumphs in the Chicago Sealed Bonnet Contest and the Boston Endurance Race, establish beyond the possibility of a doubt that the Warner Auto-Meter is the only speed-and-distance indicator that can be depended upon to do the work right at all times and under all conditions.

Accurate as a Watch—Reliable as a Compass

Warner Auto-Meters are made on the proven-successful magnetic principle. They're just as reliable and durable as a mariner's compass. No matter how rough the road, you can tell at a glance exactly how fast you are going. The arrow never flutters or bobs back and forth. The Warner Auto-Meter is as accurate as a watch.

You ought to have an Auto-Meter on your machine—it doubles the pleasure of autoing, helps you to control your machine and frequently saves embarrassing situations in the police court.

You'll notice the handsome little Auto-Meter on most of the best cars. Take a look at it; inquire about it—nearly all automobile dealers sell Auto-Meters.

Write us the name and power of your car, and we'll tell you just what it will cost you to put an Auto-Meter on the dashboard.

THE WARNER INSTRUMENT CO., 771 Roosevelt St., Beloit, Wis.
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1907 SEAL — MADE IN NEW HAVEN, CONN.

CONTINENTAL

ALL THAT A MOTOR CAR SHOULD BE

1907 SEAL — MADE IN NEW HAVEN, CONN.

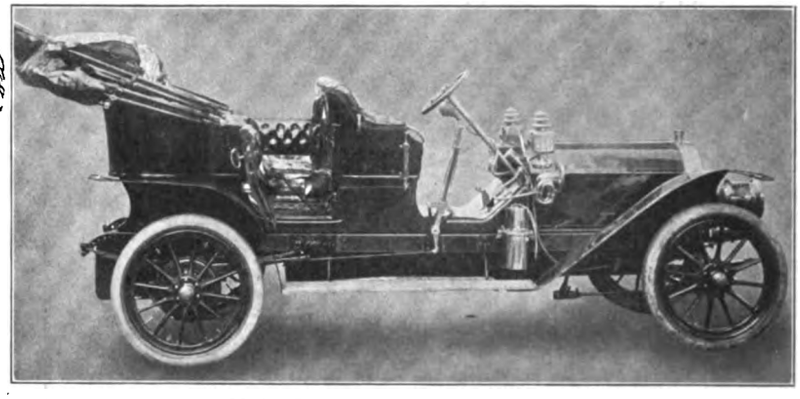
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CAR THAT'S MADE GOOD

Write for agency for unassigned territory; a valuable asset for any dealer.

A Car with a proud record, and glorious future.

THE CONTINENTAL AUTO MFG. CO.
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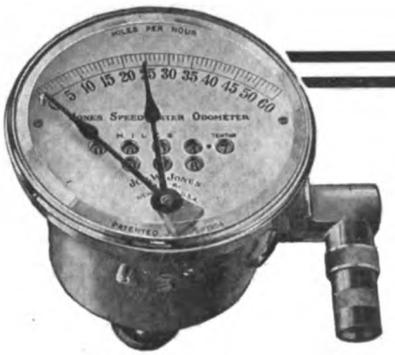
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Empire Tires
WEAR LONGEST

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Better than any Speed Indicator in the World

1908 Jones Speedometer

is to speed indicators what the highest type of Limousine is to the cheap Runabout—with one exception—the cost. The Limousine will cost ten times more than the Runabout, but full value is received. Many Speed Indicators cost as much as the Jones—but they are in the Runabout class and should be sold as such.

The Jones is the pioneer speed indicator. It is the accepted standard speed indicator. It is used in this country and Abroad by the Police Departments as a means for timing motor vehicles for reason of its accuracy. It won the Royal Automobile Club's Reliability award, finishing the Contest without one mark against its mechanical construction, receiving the Gold Medal. It was used by S. F. Edge on his Napier Cars when he made the World's most remarkable record on the Brooklands Track, London, England; 1,588 miles; 1,310 yards in 24 hours. 66 miles an hour means 4,039,200 revolutions of the speedometer shaft. Isn't this more than a demonstration of Jones' staying qualities?

The Jones guarantee for Reliability and Accuracy is stronger than that of any other manufacturer. From every point of view the Jones is the best in the World.

Exhibit at both Grand Central Palace and Garden Shows.

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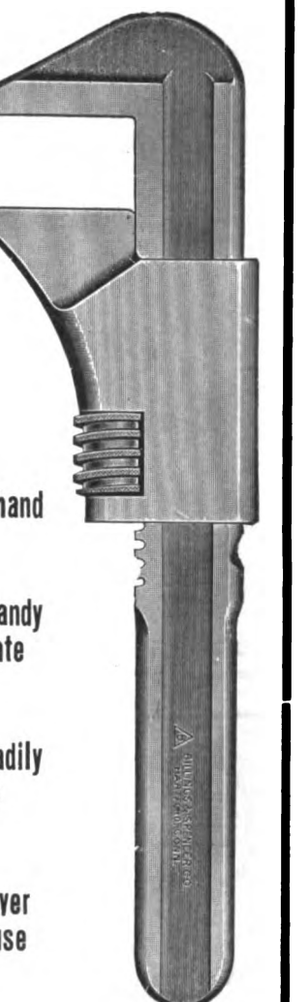
CHICAGO,
1421 Michigan Avenue.

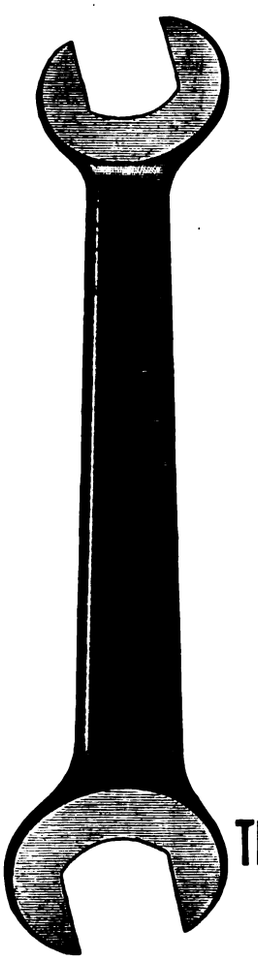
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They are handy to manipulate

They are readily adaptable

They are never failing in use

THE B. & S. AUTO WRENCH

is a tool as necessary to your car as the engine itself. Don't fail to get our catalog of Auto Forgings and Tools.

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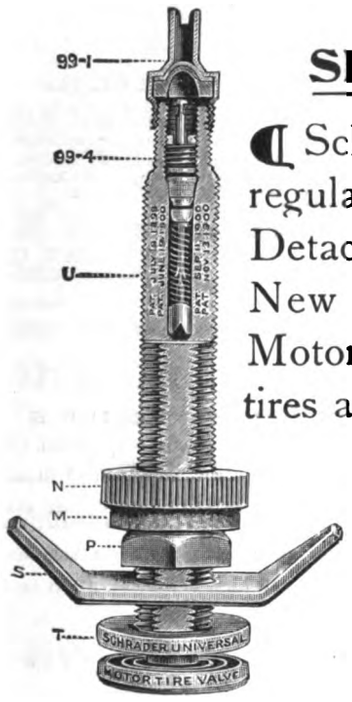
London: 8 Long lane, Aldersgate St.



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Trade Mark Registered April 30, 1895



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¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 797 Motor Tire Valve is the standard for 2½-inch and 3-inch tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

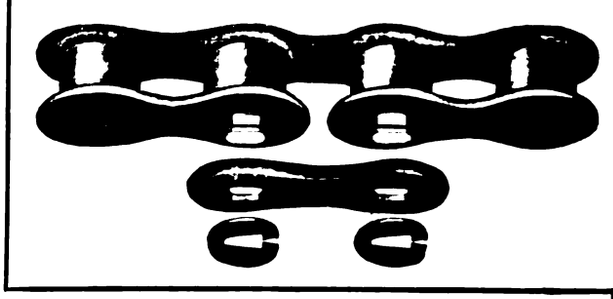
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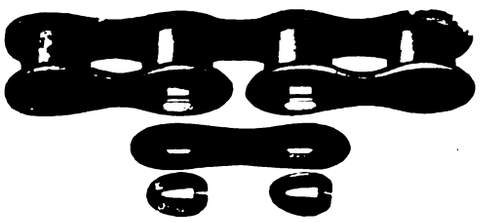
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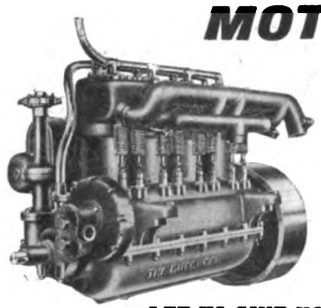
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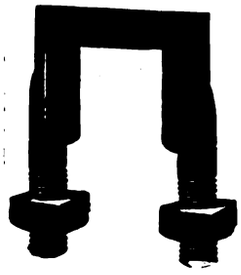
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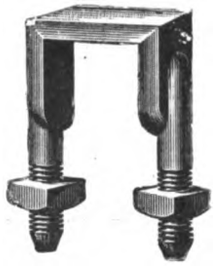
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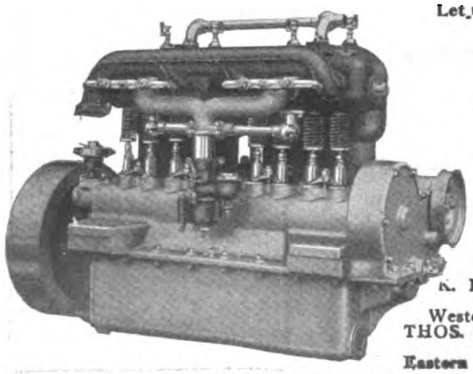
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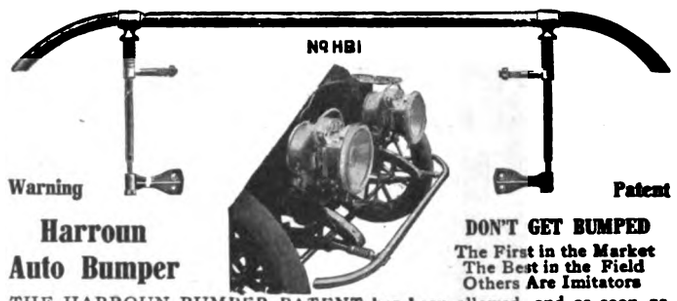
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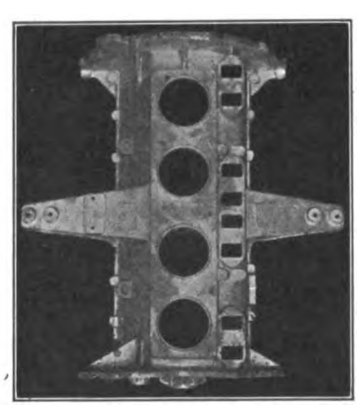
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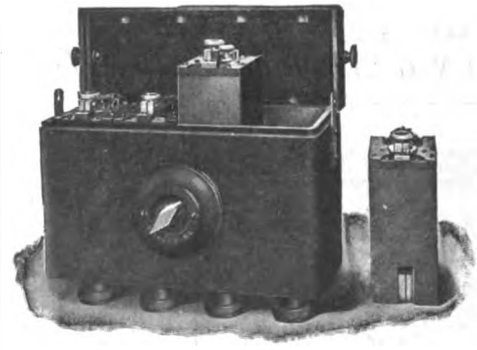
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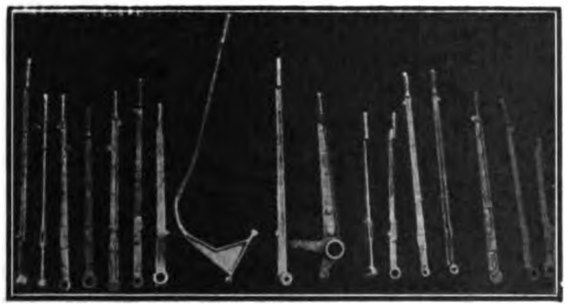
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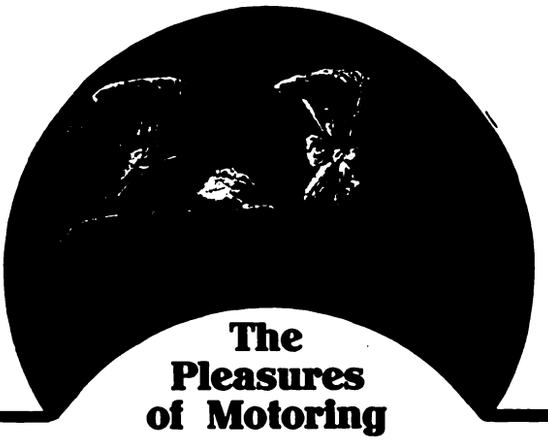
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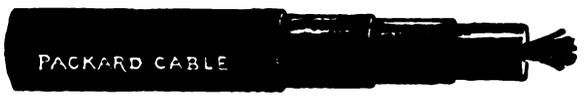
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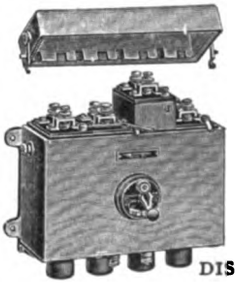


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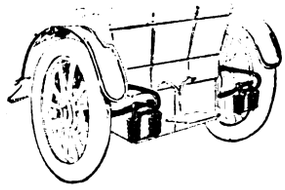
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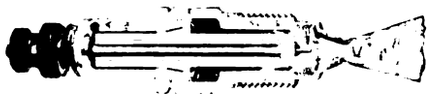
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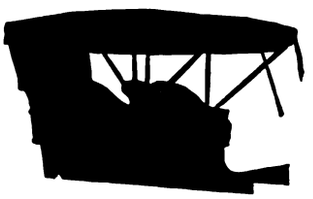
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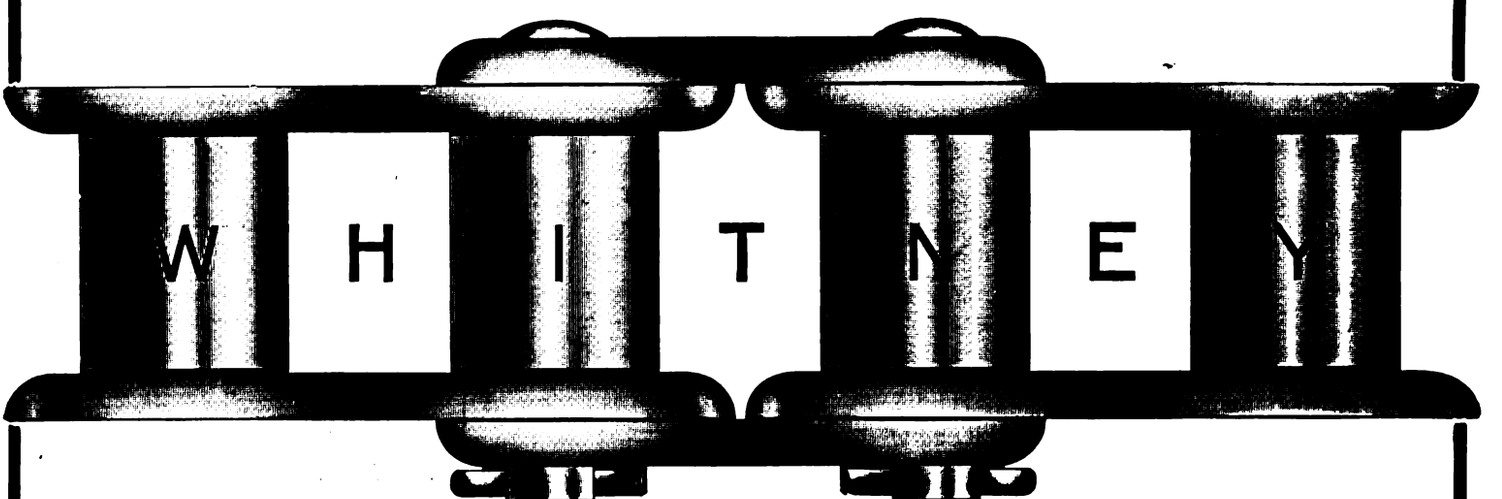
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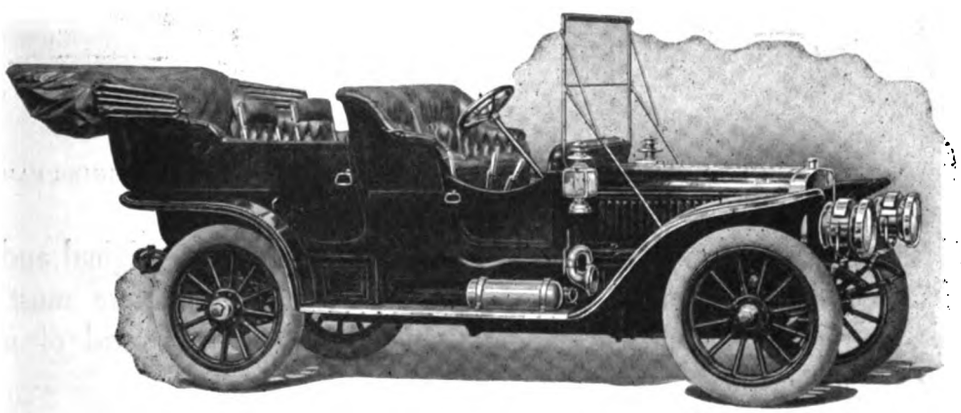
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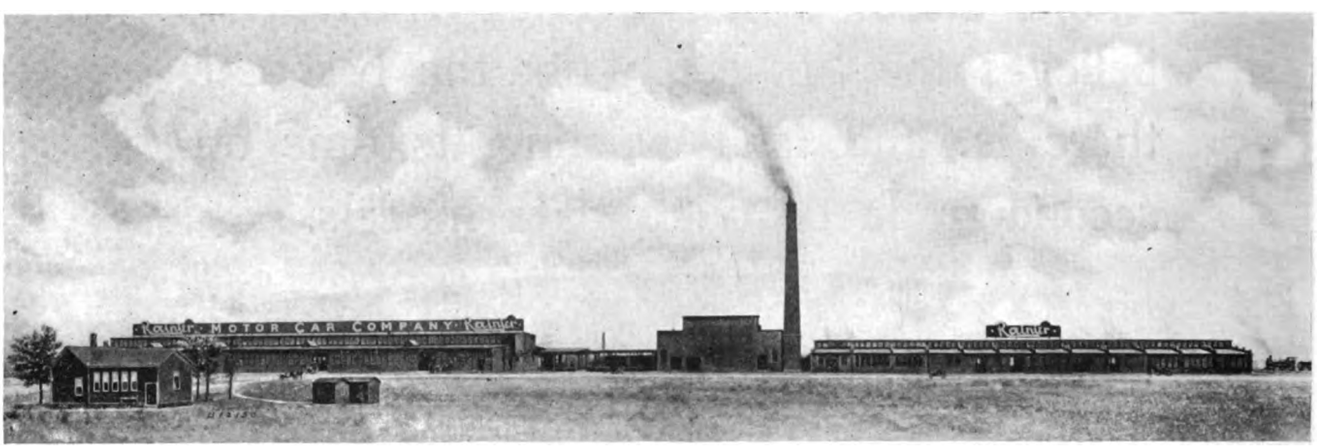
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"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



OUR NEW PLANT, FROM WHICH IS COMING THE 1908 "MODEL D," TO ADD TO RAINIER FAME.

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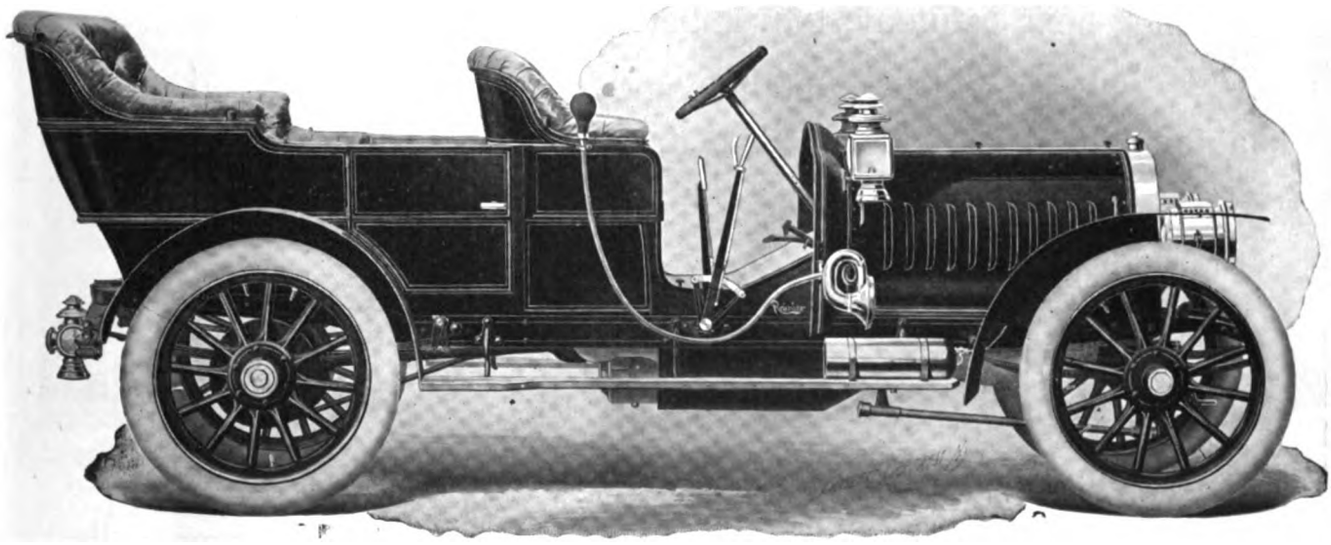
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1908 "Model D," 45-50 H. P.

SPECIFICATIONS

ENGINE—Rated H. P., 45-50; four cylinders, vertical, cast in pairs; 5-inch bore, by 5¼-inch stroke; cylinders hard gray iron castings, accurately ground to size; pistons light but rigid, ground to fit; valves on opposite sides, mechanically operated, all interchangeable; cams forged integral with shafts; crank shaft nickel steel forging, with bearing surface ground; main engine bearings and connecting rod bearings of finest babbitt metal, enclosed in bronze cases, a construction the same as that in the highest priced imported cars.

IGNITION—Make-and-break system, with Simms-Bosch, low tension magneto, but with a greatly improved and simplified mechanical sparking device, insuring accurate timing and minimum need for adjustment; one upright ignition shaft in place of four.

LUBRICATION—Positive feed mechanical oiler, driven by gear from the cam shaft, provides for engine bearings, magneto and pump shaft; Cylinders and pistons fed by splash system.

CARBURETER—Improved automatic type, having auxiliary air control on dash; feed by gravity flow through trap and screen; Capacity of gasoline tank, 20 gallons, two in reserve.

COOLING SYSTEM—Extra large radiator with fan running mounted on a pedestal over the timing gear case; fan belt runs vertically, driven by a pulley directly on the crank shaft.

CLUTCH—Multiple disc, alternate bronze and steel plates, running in oil; very sensitive touch.

TRANSMISSION—Selective type of gears, four speeds forward and one reverse, direct drive on third speed; shafts and gears nickel steel, and shafts mounted on imported ball bearings; counter shaft located below driving shaft, enabling use of sealed bearings, thereby avoiding oil leakage.

PROPELLER SHAFT—Nickel steel, with new and improved universal joints; driving pinion forged integral with the shaft.

REAR AXLE—Driving axle of floating type, with hubs mounted on tubular axle which carries the weight of the car; drive is bevel gear through clutch driven hubs; driving gear housings manganese bronze, while differential case is drop forging.

BRAKES—Hand and foot brakes, mounted on rear wheel drums, both interior expanding; hand brake pulls towards operator.

FRONT AXLE—Drop forging, manganese steel, I beam section; wheel hubs mounted on imported annular ball bearings.

WHEELS—36-inches with 1¾-inch spokes, second growth, grade A hickory.

TIRES—Rear 36 x 4½-inch, front 36 x 4-inch. Make optional.

FRAME—Pressed nickel steel, with 2½-inch drop forward of rear axle.

CONTROL—Spark and throttle on steering wheel, with stationary segment and foot accelerator pedal.

MUFFLER—Cut-out on all cars.

WHEEL BASE—119 inches.

SPRINGS—Front, semi-elliptic; rear, improved type of platform or three point suspension; size of springs greatly increased; quality of spring steel is most expensive and finest obtainable.

BODY—Double side entrance, seven passenger capacity, full aluminum, ironed for top; extra seats can be folded or removed instantly.

EQUIPMENT—Two acetylene head lights, generator, two oil side lights, oil rear light, large horn, brass coat rail, brass foot rest, tire carriers, trunk rack, tool box on step with full set of tools, including pump, jack and tire repair kit.

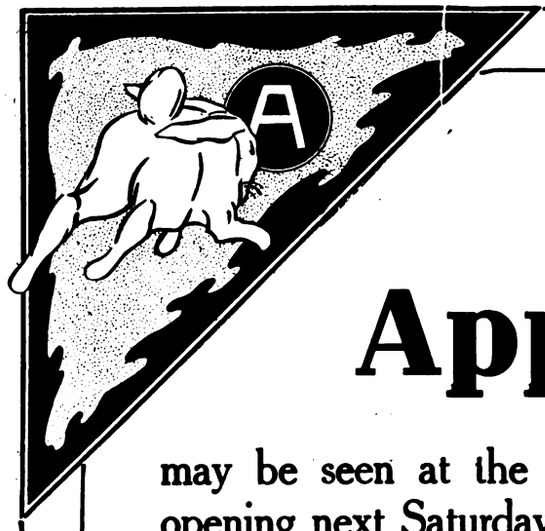
WEIGHT—2,850 pounds.

PRICE—$4,500.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

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"Famous Apperson Cars"

may be seen at the Madison Square Garden Show, New York, opening next Saturday, November 2d.

The car with a reputation and fifteen years of experience in automobile construction behind it.

Four-Cylinder and Six-Cylinder cars rightly constructed from the right materials.

Roadsters at $2750.

Touring Cars at $3000 to $5000.

Runabouts at $2750 to $5000.

We build automobiles that are mechanically, commercially, practically and economically correct. Many people know this by experience. All interested parties, users or dealers, are cordially invited to call at our exhibit at the Garden, Space 12, where we will be prepared to demonstrate and prove all of our claims for the "FAMOUS APPERSON CARS."

An interview or correspondence with Dealers from unoccupied territory is invited.

Apperson Bros. Automobile Company

Kokomo, Indiana

Members A. L. A. M.

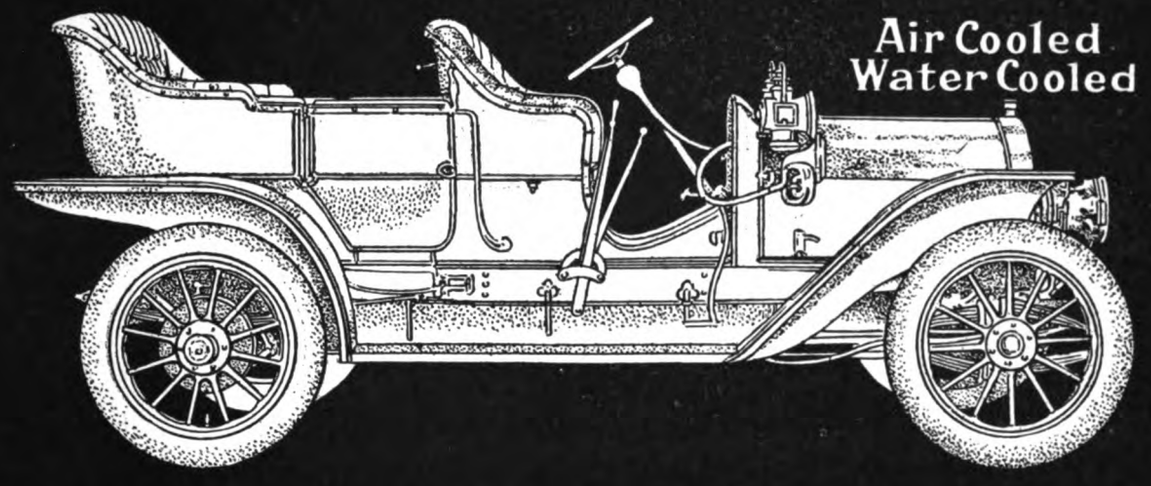
SIDNEY B. BOWMAN AUTOMOBILE CO., 225 W. 49th St., New York, N. Y.
JOSEPH F. GUNTHER CO., 1240 Michigan Ave., Chicago, Ill.
FRED S. SMITH, 38 Columbus Ave., Boston, Mass.
PHILADELPHIA AUTO COMPANY, 338 North Broad St., Philadelphia, Pa.



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THE MARMON

"A Mechanical Masterpiece"



The Easiest Riding Car In The World

THE wives of Marmon owners are its staunchest friends. The Marmon rides so easily, takes the rough roads so gently that a woman can tour in it all day without exhaustion and without injury to her health. No other car, foreign or domestic, even approaches it for comfort. The reason for this unrivalled ease of motion is readily apparent to any one who investigates.

¶ The Marmon offers a number of just such striking advantages, not to be found in any other car.

¶ At the same time it offers all the advantages of beauty, quality, repute and ability, to be found in any other car at any price.

¶ The exclusive mechanical excellence of the Marmon demands your careful consideration.

¶ Model H Touring Car, 40-45 H. P., $3500; Model H Roadster, 40-45 H. P., $3500; Model G Touring Car, 35-40 H. P., $3000.

¶ For full description of all 1908 Models, address Dept. 16.

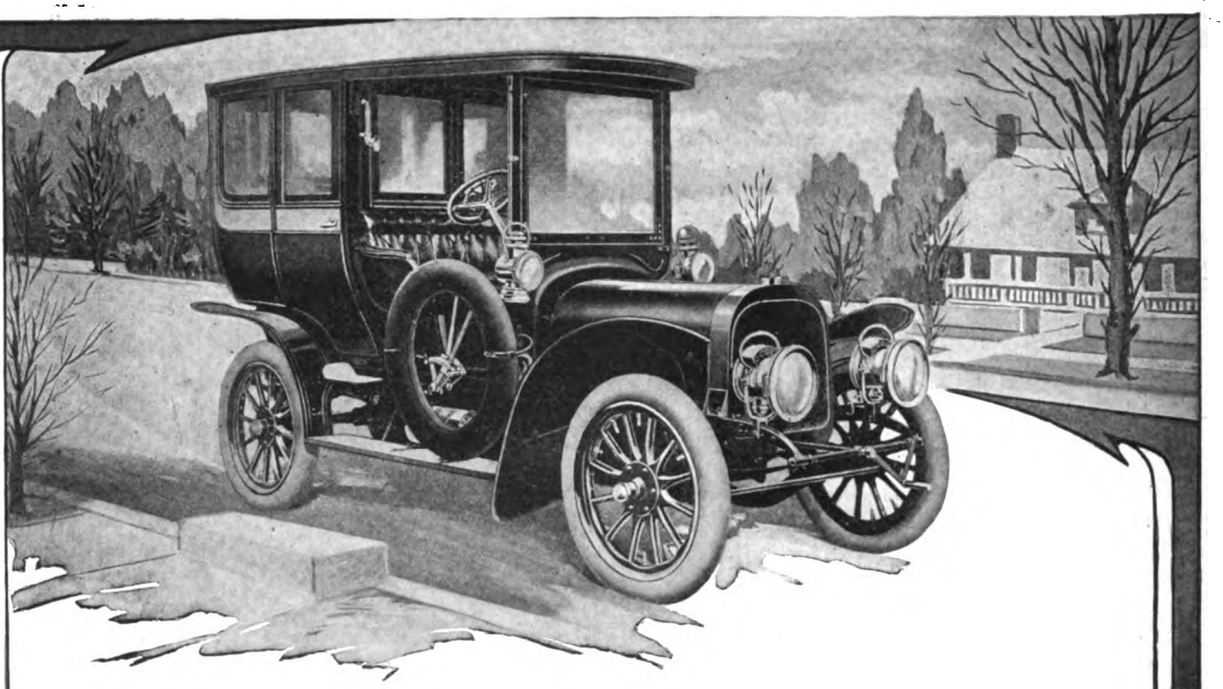
Nordyke & Marmon Co., (Established 1851) Indianapolis, Ind.

Represented by

New York City, Theo. E. Schulz, 1843 Broadway.
Boston, Mass., F. E. Wing Motor Car Co., 12 Columbus Ave.
Philadelphia, Pa., Brazier Auto Works, 38th and Market Sts.
Los Angeles, Cal., C. S. Anthony, 440 W. 33d St.
Baltimore, Md., Snodeal Automobile Co., 2552 Madison Ave.
East Orange, N. J., Rickey Machine Co., 92 Eaton Place.
St. Louis, Mo., Van Automobile Co., 706 Washington Ave.
Pittsburg, Pa., Pennsylvania Auto Co., Hay St. & Kelly Ave., Wilkinsburg.
Binghamton, N.Y., Heller-Spawn Motor Car Co.
Waterloo, N. Y., Waterloo Automobile Co.
Milwaukee, Wis., John Ure, Jr., & Co., 172 12th St.

AGENTS—1908 Territory Now Being Placed

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While you are looking up the advanced ideas in construction at the Show, stop at the Haynes booth and

1. See a high-powered car without side-chains.

A unique principle—the Haynes bevelled-sprocket-and-roller-pinion—makes shaft drive perfectly feasible and practical even on the 60 H. P. Model U, with its long wheel-base and great power. The abolition of the dirty, noisy stretching side-chains alone is sufficient reason for a selection of the Haynes.

2. See the way the Haynes universal joints are made practically unbreakable, with a floating cube of solid steel taking the wear instead of the usual slender pins.

3. See the Haynes change gear system—high speed to low without a jar or a possibility of stripping or burring the gears. (A lady can handle it.)

4. See the unique Haynes Master Clutch which works like a brake, metal to metal. It makes shocks impossible, it won't wear out, and there is no leather to renew.

5. See the stock model Haynes that represented America in the Vanderbilt Cup Race where these and other unique devices received one of the hardest tests ever given a stock chassis.

6. See the new member of the Haynes family—the Model W, 45 H. P., with a new body design, $3,000, ranking in power and size between the 30 H. P. Model S at $2,500, and the 60 H. P. Model U, at $3,750.

The Haynes factory was the first automobile factory built in America, and the Haynes cars for 1908 are the fruit of fourteen years of brilliant but conservative progress as pioneers in original and successful invention.

HAYNES

For catalogue address Desk C-58

HAYNES AUTOMOBILE COMPANY, KOKOMO, IND.

Oldest Automobile Manufacturers in America - - - Members A. L. A. M.

NEW YORK: 1715 Broadway CHICAGO: 1420 Michigan Avenue

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THOMAS

THE E. R. THOMAS MOTOR CO. presents four styles of chassis and nineteen styles of bodies

Thomas 4-20 Town Car

Combines luxury with utility and necessity; designed particularly for city and suburban use in good or bad weather, for calling and shopping, for the theatre, for social functions and touring on good roads. This car is furnished with brougham, landaulet, cabriolet, limousine and doctor's car bodies. In Europe this style of car is the vogue, as it rapidly is becoming in America. Prices, $3,000 to $3,250.

Thomas 4-40 Detroit

A marvel of smooth and quiet running with a dash in operation and distinctive style in appearance that denotes the thoroughbred and fascinates the most critical. The 4-40 has been strengthened and improved where the wisdom of experience has suggested. It is especially designed to successfully eclipse at a much lower price, shaft driven cars of the highest price and class. It is equipped with runabout, tourabout, touring and limousine bodies. Prices, $2,750 to $3,750.

Thomas 4-60 Flyer

The Old Reliable is smoother, snappier, faster, lighter, quieter and roomier than ever. It has been redesigned and refined until it has become one of the most beautiful and stylish cars to be seen. The mechanical changes are largely refinements, though the motor generates more power. A bearing between each cylinder is still one of its chief characteristics. It is equipped with runabout, tourabout, landaulet and limousine bodies. Prices, $4,500 to $5,700.

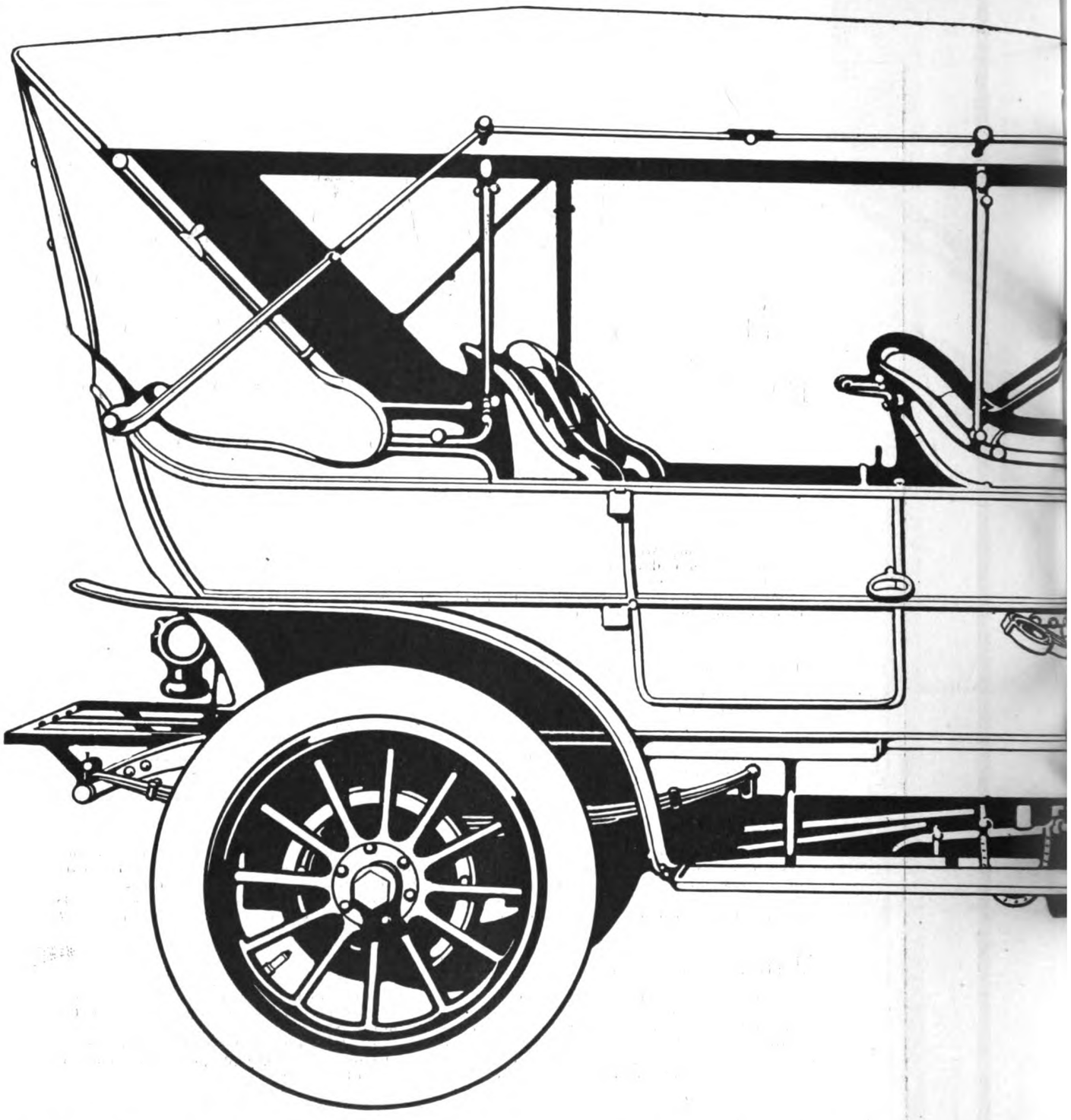
Thomas 6-70 Special

This is the climax of automobile construction, and is one of the most powerful and flexible cars made, retaining as it does, the structural principles that have counted so much for reliability in the Thomas 4-60 Flyer. There is not a single experimental feature in its entire construction. For speed, smooth running on hills and bad roads, and for slow speed, all on the high gear, the 6-70 Special is not equalled. It is equipped with runabout, touring, landaulet and limousine bodies. Prices, $6,000 to $6,900.

E. R. Thomas Motor Co.

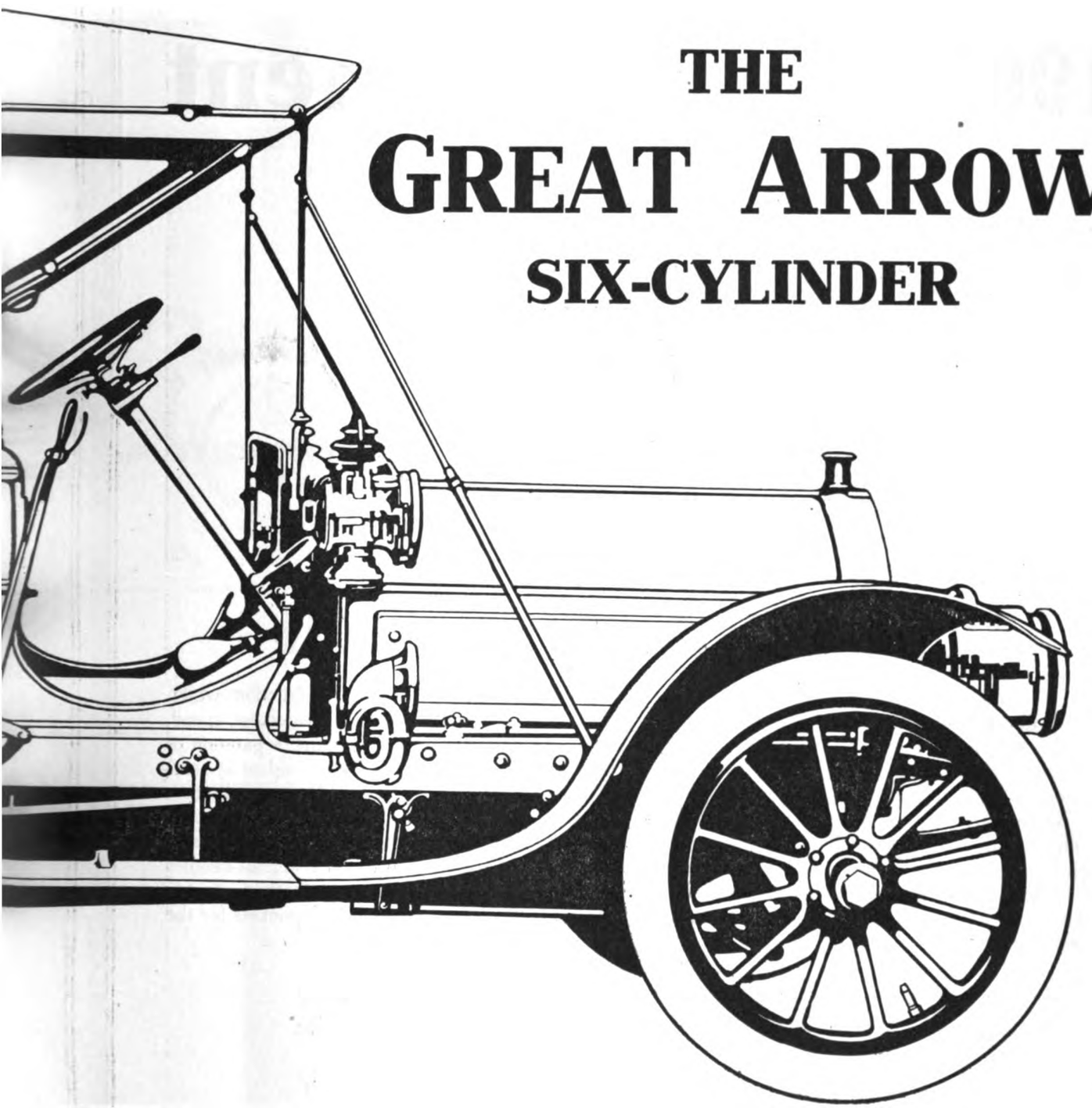
Members A. L. A. M. BUFFALO, NEW YORK

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THE Great Arrow Six-Cylinder Car is not theory. It is fact. A single experience in a six-cylinder Great Arrow will prove that vibration has been reduced to a minimum. This comfort, this added touch of luxury to a car already most efficient in construction, makes the 1908 Great Arrow six-cylinder the ideal car for the man who wants everything.

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THE GREAT ARROW SIX-CYLINDER

The best mechanical description ever written will not be so convincing to you as a single hour's demonstration.

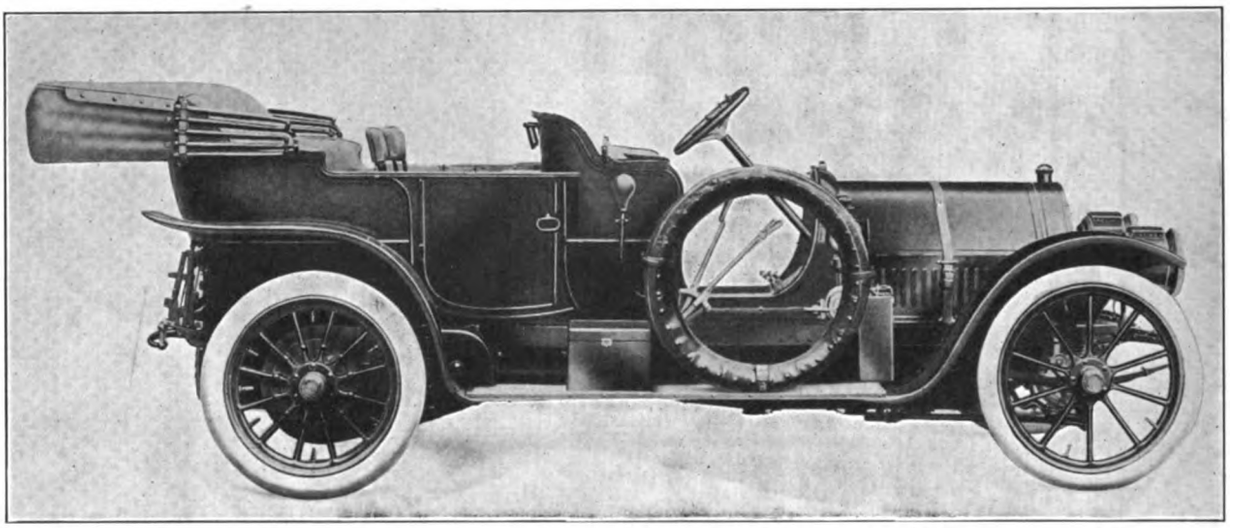
HERE ARE THE 1908 TOURING CARS

4-cylinder Great Arrow 30 H. P., Price $4000
4-cylinder Great Arrow 40 H. P., Price $5000
6-cylinder Great Arrow 40 H. P., Price $5500
6-cylinder Great Arrow 60 H. P., Price $6500

The George N. Pierce Company, Members Association of Licensed Automobile Manufacturers **Buffalo, N. Y.**

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1908 Announcement



Pope-Toledo Type XVII

Its keynote of design is close attention to those fine details and niceties of construction which enhance the comfort and convenience of the user in quietness, freedom from vibration, cleanliness, speed, luxurious accommodations and appointments, ample carrying space for luggage; an entire separation of the mechanical part of the car from that used by the passengers; two separate and independent systems of ignition on two separate sets of spark plugs, practically eliminating all electrical trouble, encased noiseless Chrome Nickel Steel chains; castled nuts and split keys to every mechanical fastening; an enclosed detachable pan under the whole car to prevent the entrance of dirt or water to the propelling mechanism; an entire absence of brass parts, blued steel being used on all parts handled by the chauffeur; all handles and fittings in that part of the car occupied by the passengers covered with fine seal leather; double extension robe rail, folding detachable seats, dress-suit cases for the ladies' apparel and pockets for the gloves, goggles and other articles.

We take great pleasure in announcing to our dealers and many friends of the Pope-Toledo Car that our new models are

NOW READY FOR DELIVERY

See our exhibit at Madison Square Garden Show

Pope Motor Car Company

Member A. L. A. M. **Toledo, Ohio**

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The new Model "K" and Model "L"

WHITE STEAM CARS

will be exhibited at

the Automobile Show in

MADISON SQUARE GARDEN

November 2-9

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When you pay $3000 to $5000 for an Automobile, Mr. Business Man, you get a pretty *good car*—but you don't get your *money's worth*

You don't because today most automobile *values* bear the same relation to automobile *prices* that *bicycle* values and prices bore to each other *twelve years* ago.

You paid $125.00 for a good wheel *then*. Today you can buy a *better* one for 60 per cent *less*.

Before you pay $3000.00 to $5000.00 for an *automobile*, find out what sort of a car the *Mitchell* is at *$2000*.

Don't take it for granted that $2000 *can't* buy as good automobile value.

Prove that it *can;* it isn't a bit of trouble. Put *higher* prices on the *defensive*. Do it this way—

Try the Mitchell—any agent anywhere will be *glad* to "show you" a combination of style, finish, construction and performance in the Mitchell new models, the superior of which hasn't been "shown" in any car made today regardless of price.

See the Mitchell at the show—scrutinize it most critically—leave your business card and address and state the most convenient time to call for you.

Then we'll send a car around and show you a *silent argument* that will instantly appeal to your business judgment and *convince* you—a silent argument the equal of which no *salesman* ever will be capable.

The Mitchell will *prove* value equal to that of any car. The Mitchell will *decide* the question of automobile prices and value once and for all time.

Isn't saving $1000 or $3000 on an automobile which *proves* itself right *worth considering*, Mr. Business Man?

If you saw a chance to save $3000 for your business, wouldn't you go to at least $500 worth of trouble to do it?

To save $3000 on your automobile, which is worth $3000 to you *personally*, is no trouble *at all* and doesn't cost *anything*.

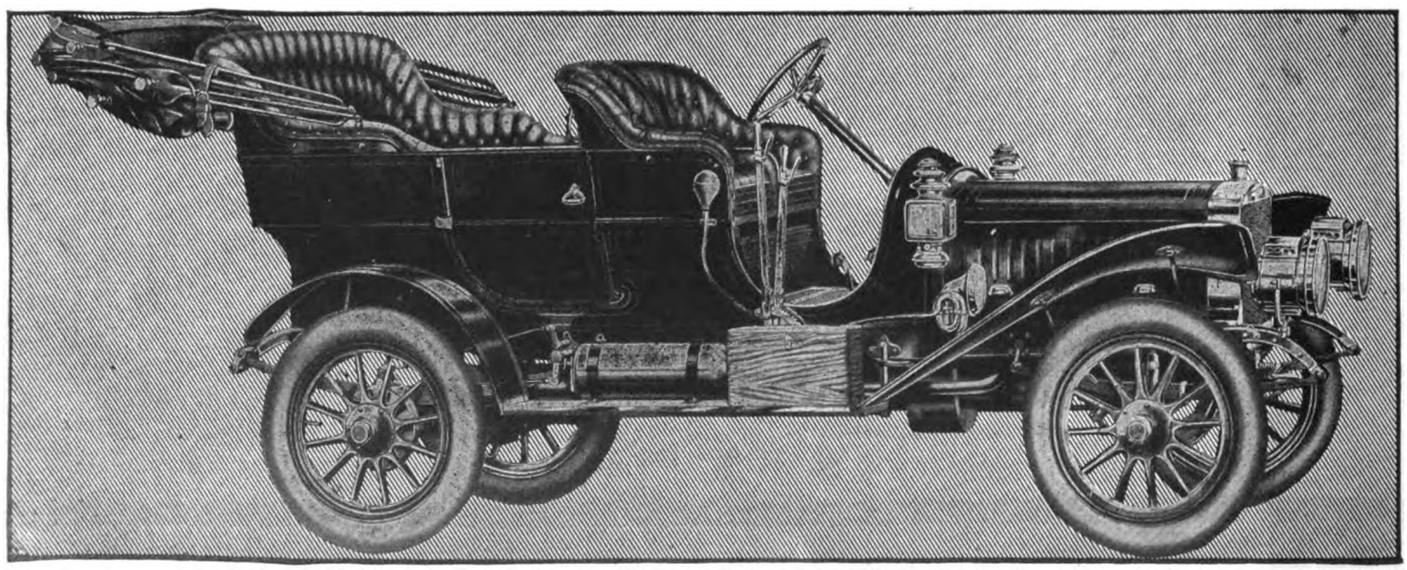
You simply telephone any Mitchell agent that you are interested (no obligation on your part) and want a demonstration.

Think it over, Mr. Business Man. Do you know a single good, business-like reason *why* you should pay more than $2000 for an automobile? Prove that there *isn't* any by writing us or the nearest agent for names of many satisfied users of the Mitchell who have driven their cars thousands of miles over all kinds of roads and hills, and have encountered every known road test that makes or breaks a car. Let them tell you facts in their *every-day* experience which proves the Mitchell to be the most economical car to *keep* as *well* as to buy.

Mitchell Motor Car Co., 275 Mitchell St., Racine, Wis.

Member American Motor Car Manufacturers' Association

If not going to the show, write for Catalog No. 18

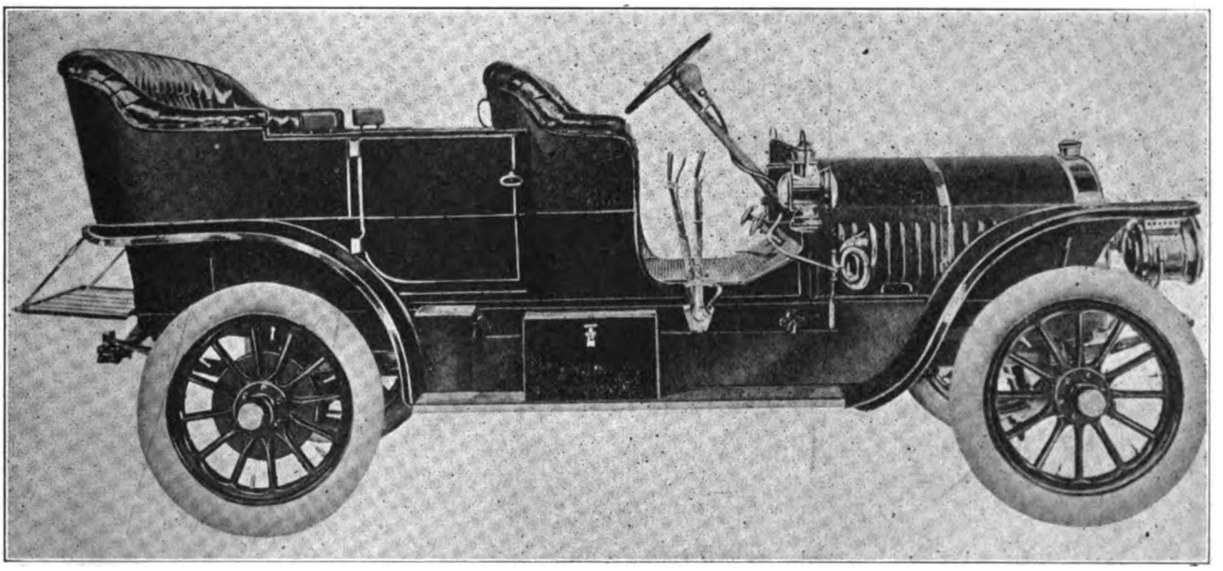


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National

MOTOR CARS

"THE ALL BALL-BEARING CARS"



The 1908 Line consists of

Two 4-Cylinder and Two 6-Cylinder Models

in Touring Cars, Limousines and Roadsters. Each equipped with **National Ball-Bearing Motors**

The entire line embodies the tried and proven NATIONAL type of construction, refined and perfected in all details to the highest possible degree.

National Model K, 4-cylinder, 4⅞x5,	$3,500.00	National Model R, 6-cylinder, 4½x4¾,	$4,200.00
National Model N, 4-cylinder, 5x5,	$3,700.00	National Model T, 6-cylinder, 5x5,	$5,000.00

Each machine carries 7 passengers comfortably.

National Motor Vehicle Company, Indianapolis, Ind.

Member American Motor Car Mfrs. Ass'n, N. Y.

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GOODYEAR LEADS

A count of the automobiles equipped with Quick Detachable Rims at the Grand Central Palace Show, just held in New York City, shows the following result:

Goodyear Universal Rims on 27 Cars

Marsh Rims on 19 Cars
Goodrich Rims on 17 Cars
Midgley Rims on 8 Cars
Fisk Rims on 2 Cars

The Goodyear Universal Rim has been adopted exclusively for 1908 by the following manufacturers, representing an output approximating 64,000 rims, viz:

The Bartholomew Co. (Glide)
Buick Motor Co
Chalfonte Motor Car Co.
Crawford Auto Co.
De Luxe Motor Car Co.
Dolson Auto Co.
Jackson Auto Co.
Motorcar Co. (Cartercar)
Pierce Engine Co. (Pierce-Racine)
Reo Motor Car Co.
The Smith Auto Co.
Waltham Mfg. Co.
York Motor Car Co.

See it and the Goodyear Tire demonstrated at the Garden Show or any branch. Tire off or on in less than a minute.

GOODYEAR RED SEAL 1908 TUBES GUARANTEED FOR ONE YEAR

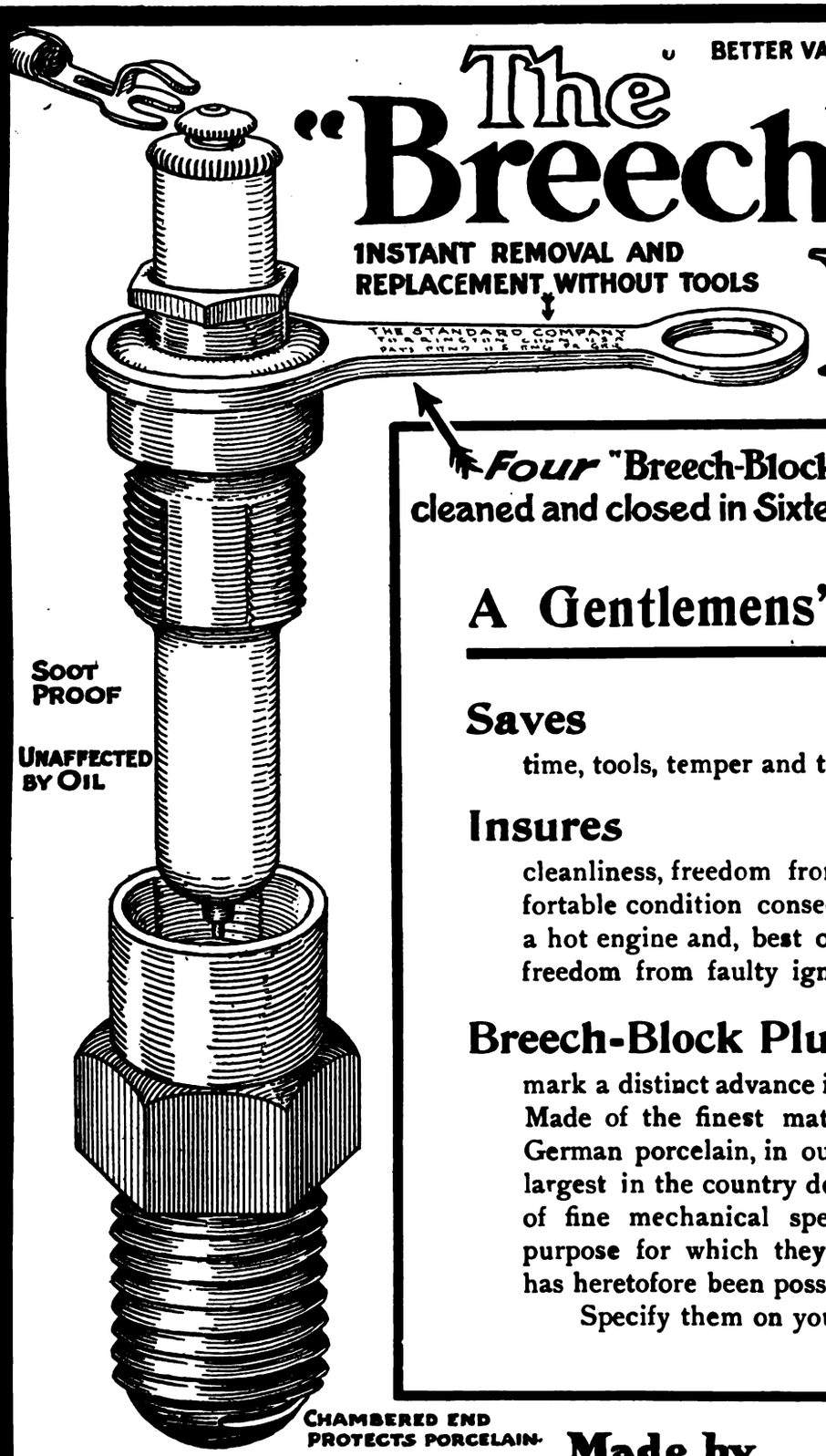
The Goodyear Tire & Rubber Co.

AKRON, OHIO

BRANCHES:

NEW YORK—64th St. and Broadway.
BOSTON—Cor. Dartmouth and Boylston Sts.
CHICAGO—80-82 Michigan Ave.
ST. LOUIS—712-714 Morgan St.
BALTIMORE—400 S. Fremont Ave.
CINCINNATI—317 East 5th St.
PITTSBURG—5988 Centre Ave.
PHILADELPHIA—1404 Ridge Ave.
SAN FRANCISCO—506 Golden Gate Ave.
BUFFALO—719 Main St.
LOS ANGELES—932 S. Main St.
DETROIT—251 Jefferson Ave.
DENVER.

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BETTER VALUE THAN ANY OTHER PLUG MADE

The "Breech-Block" Plug

INSTANT REMOVAL AND REPLACEMENT WITHOUT TOOLS

Four "Breech-Block" plugs can be opened, cleaned and closed in Sixteen Seconds by the watch.

A Gentlemens' Spark Plug

Saves

time, tools, temper and trouble;

Insures

cleanliness, freedom from the "fussed-up" uncomfortable condition consequent of working around a hot engine and, best of all, insures comparative freedom from faulty ignition.

Breech-Block Plugs

mark a distinct advance in spark plug construction. Made of the finest materials, including genuine German porcelain, in our own factory (one of the largest in the country devoted to the manufacture of fine mechanical specialties), they fulfill the purpose for which they are designed better than has heretofore been possible.

Specify them on your cars.

Made by

The Standard Co.,

Torrington, Conn., U.S.A.

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PLANT OF

THE WHITLOCK COIL PIPE CO.



HARTFORD, CONN., U. S. A.

WHITLOCK

COOLERS AND MOTOR CONNECTIONS OF ALL KINDS WILL BE USED AS A PART OF THE REGULAR EQUIPMENT FOR

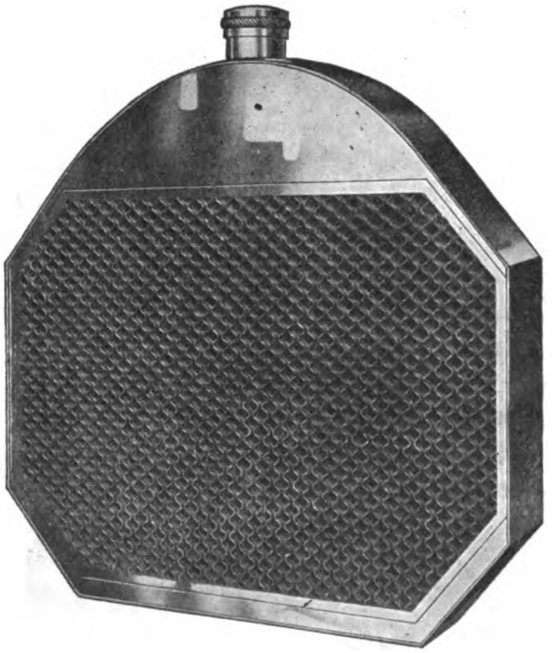
1908
HIGH GRADE CARS

We Have the FINEST FACILITIES in this COUNTRY FOR MAKING

COOLERS

EXHAUST PIPES

INTAKE PIPES



HOODS

HINGES

MOTOR CONNECTIONS

We have over 40,000 Coolers of one type alone on American cars

Over 1500 of this type were placed on the highest grade of English cars in England during the past year.

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"KEEP YOUR EYE ON CONTINENTALS"

"They're Specifying

Continental
TIRES

on 1908 Cars"

Continental Caoutchouc Company
43 Warren Street, New York
JOE M. GILBERT, General Manager

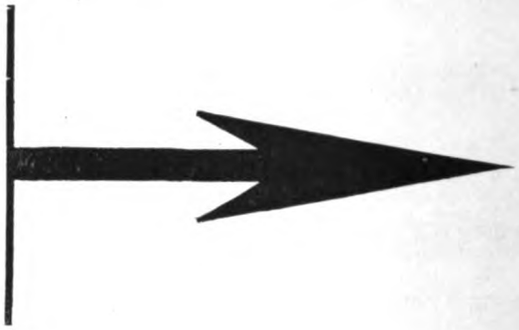
TRADE-MARK

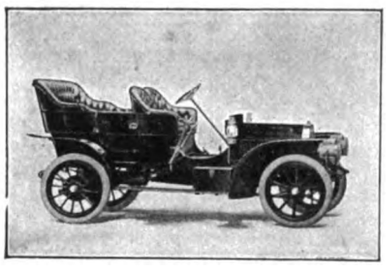
ALSO
2100 Broadway, cor. 73d St., New York. 729 Main Street, Buffalo, N. Y. 260 Jefferson Ave., Detroit, Mich.

DISTRIBUTING AGENTS
Post & Lester Co., 821 Boylston St., Boston, Mass.
Jas. L. Gibney & Bro., 211 N. Broad St., Philadelphia, Pa.
Continental Agency Co., 1268 Euclid Ave., Cleveland, O.
Western Continental Caoutchouc Co., 1438 Michigan Boulevard, Chicago, Ill.
Pacific Continental Tire Agency, 640 Golden Gate Ave., San Francisco, Cal.

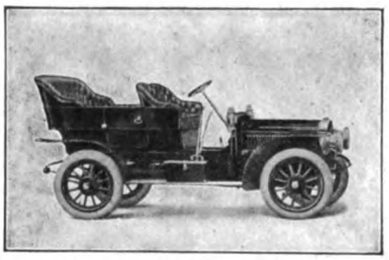
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MR. MOTORIST:
There's some interesting news on the other page. Digest it.

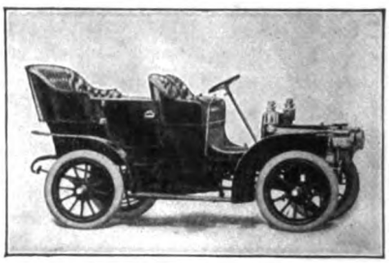




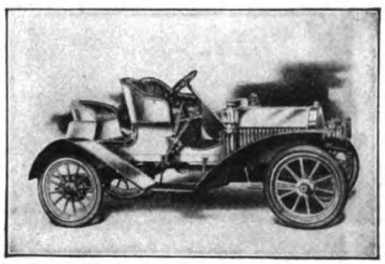
Model G Touring Car.....$2,000
25 H. P. Four Cylinder.



Model H Touring Car
30 H. P. Four Cylinder.



Model T. $1,000
10 H. P. Single Cylinder.



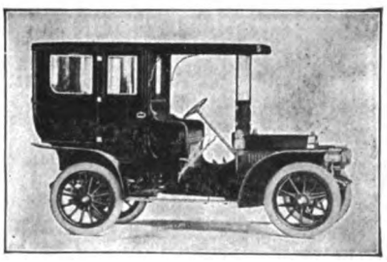
Model G Runabout.....$2,000
25 H. P. Four Cylinder.

Cadillac

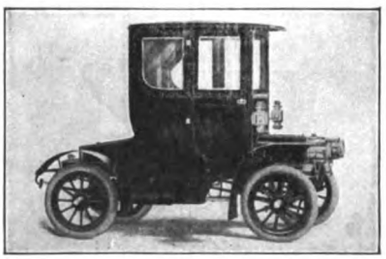
Will be exhibited at Madison Square Garden, November 2-9.



Model S Runabout.
10 H. P. Single Cylinder.



Model G Limousine.....$3,000
Model Limousine.....$3,600



Model T Coupe.....$1,350
10 H. P. Single Cylinder.



Model M Delivery.
10 H. P. Single Cylinder.

CADILLAC MOTOR CAR CO., Member Association Licensed Automobile Manufacturers **DETROIT, MICH.**

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If Motorists would equip their cars with good tires they would have a feeling of contentment that should make motoring a decided pleasure.

Branches and Agencies

New York:
214 W. 47th St.,,
17 Warren St.

Chicago:
81 Michigan Ave.

Boston:
Motor Mart.

Syracuse:
214 Clinton St.

Buffalo:
379-383 Washington St.

Rochester:
55 Main St. E.

Pittsburg:
913-915 Liberty Ave.

Philadelphia:
13th & Cherry Sts.

Cleveland:
1829 Euclid Ave.

Dayton:
405-411 East Third St.

Minneapolis:
708 Hennepin Ave.

Atlanta:
90 No. Pryor St.

St. Louis:
538 N. Vandeventer Ave.

Kansas City:
605-607 E. 15th St.

Denver:
1562 Broadway.

Los Angeles:
118-122 E. Tenth St.

San Francisco:
423-433 Golden Gate Ave.

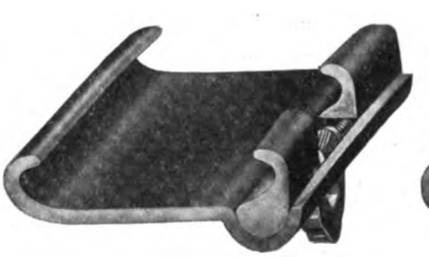
Portland:
86 Sixth St.

Seattle:
Ninth Ave & Pike St.

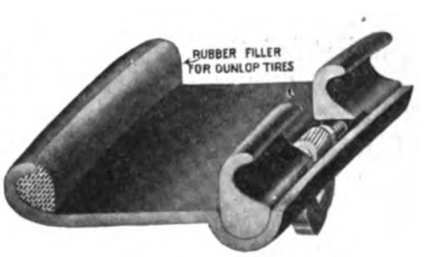
Morgan & Wright Tires are ever ready to supply the Motorist with proof conclusive that there is lots of contentment stored away in good tires.

Some Motorists don't know this—that's because they don't specify good tires.

MORGAN & WRIGHT TIRES ARE GOOD TIRES



FOR CLINCHER



FOR DUNLOP
(Note rubber filler in clincher on left.)

The Improved Midgley Rim, illustrated above, accommodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.

MORGAN & WRIGHT, DETROIT

Madison Square Garden Show—Space 78.

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The Tire of the Day

Wearing quality—that's what the Motorist looks for in the tire he buys.

But there's absolutely no positive way of telling what's in the tire in the way of service until he has tried it.

The name of the maker of that tire—stamped on his product—is the *only* thing by which the purchaser can be governed.



The tire which lasts longest in actual service and gives the owner the least trouble is certainly the *best* tire—and the *cheapest*—no matter what its *first* cost.

And we want to prove to you that the

G & J
Oval Raised Tread Tire

is not only the *best made* automobile tire of today—but it will outwear and outlive all other makes. Therefore we want to show you that it will be cheaper if you buy G & J Tires.

There are several reasons for the above assertions.

The G & J Oval Raised Tread Automobile Tire is made of the best rubber and fabric which can be put into a tire.

We are the only sole manufacturers of automobile tires in America.

The G & J Oval Raised Tread Tire is the culmination of over fifteen years' experience and effort to produce the *perfect* automobile tire.

The G & J Oval Raised Tread was designed solely to meet the demands for a tire that would stand the wear and tear of strenuous service on American roads.

The G & J Oval Raised Tread Tire gives most wearing surface—where it is most needed; it makes skidding less liable—and equipped with the famous Midgley Tread, as we build them when desired—it makes *all* skidding and slipping *absolutely impossible.*

The G & J Oval Raised Tread Tire you will find more resilient and durable than any other make of tire you ever tried.

But you *must* try to prove all this true. Will you do so?

Good thing to remember in equipping your car is that we can supply you with the new 1908 Universal Midgley Rim which will fit any Clincher or Dunlop Tire.

G & J TIRE CO.

INDIANAPOLIS, IND.

BRANCHES

BOSTON—243 Columbus Ave.
CLEVELAND—Now No. 1837 Euclid Ave.
DETROIT—247 Jefferson Ave.
CHICAGO—1434 Michigan Ave.
NEW YORK—10 W. Sixtieth St.
SAN FRANCISCO—423-433 Golden Gate Ave.

DISTRIBUTING AGENCIES

G & J TIRE AGENCY, Denver, Colo., 1528 Court Place.
G & J TIRE COMPANY, Buffalo, N. Y., 912 Main St.
G & J TIRE AGENCY, Philadelphia, Pa., 711 N. Broad St.
WESTERN RUBBER AND SUPPLY CO., Los Angeles, Cal., 1010 S. Main St.
OMAHA RUBBER SHOE CO., Omaha, Neb., Eleventh and Farnum Sts.
NORTHWEST AUTO SUPPLY CO., Spokane, Wash., 1419-27 First Ave.
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EISEMANN-LAVALETTE

High Tension Magnetos



When a manufacturer equips with Eisemann-Lavalette Magnetos it means that he considers his cars equal in class to the highest grade foreign cars, although there may be a wide difference in price.

The greatest cars of Europe use Eisemann-Lavalette Magnetos exclusively. The Peerless, Packard and other leading American cars equip their entire output with our magnetos and freely admit that it is in a great measure due to the perfection of our instrument that the running qualities of their cars have brought them to their present remarkable popularity.

Magnetos are as permanent an integral part of the motor car construction to-day as pneumatic tires.

The question then is—which magneto?

The answer is—the Eisemann-Lavalette.

The Eisemann-Lavalette, in spite of its admitted superiority, costs, with dual ignition, $50 less to install than any competing make, because of its mechanical points of extreme simplicity, which cannot be duplicated without infringing our patents.

It does away with the cumbersome necessity of placing a timer on the motor with all its attendant wiring complications and expenses. It gives a greater increase in efficiency than any other magneto on the market. It is the most durable instrument of this sort, and it will outwear any car on which it is installed. It is perfect in the matter of timing. This means that it lengthens the life of the motor to a remarkable degree, gives perfection of service under all conditions, which can be obtained in no other way, and is as much a factor in strengthening the performance, and, consequently the reputation of the car as any other one point in its construction.

The strongest point an automobile sales agent can make in offering a 1908 car to the public is the statement that it is equipped with an Eisemann-Lavalette Magneto.

If you make a moderate price car, say $2,000 or $2,500, the use of our magneto will at once class it as a leader at that price. It will enable your agents to give demonstrations fully equal to a $4,000 or $5,000 car, provided the difference in horse power is not too great. It will mean an enormously increased demand for your cars in 1909, with no effort to yourself, and it will also mean that the best automobile agents will be more apt to solicit making connections with you on your own terms. They know the value of our instrument and we are taking strong steps to see that they do not forget it.

The Eisemann-Lavalette Magneto carries its coil in a separate box, thus providing ample space for a heavy thickness of insulation. The space is so ample that we would increase this insulation provided there was any advantage to be gained by it. Barring accidents, it is impossible for short-circuiting to occur. In the very rare cases where short-circuiting has occurred it has been a matter of slight expense and a few minutes of time to install a new coil in this separate box, thus making the instrument absolutely as good as new. When short-circuiting occurs in this separate box, which is a safe distance from the armature, the magneto is entirely unaffected.

In competing makes, which claim to be as good as the Eisemann-Lavalette, the coil is carried in the space inside the armature. This space is so small that the insulation is, of necessity, very thin and inadequate. With inadequate insulation short-circuiting is bound to occur sooner or later, and when it does occur the entire magneto is out of commission and must be replaced by a new instrument or sent to the factory for repairs.

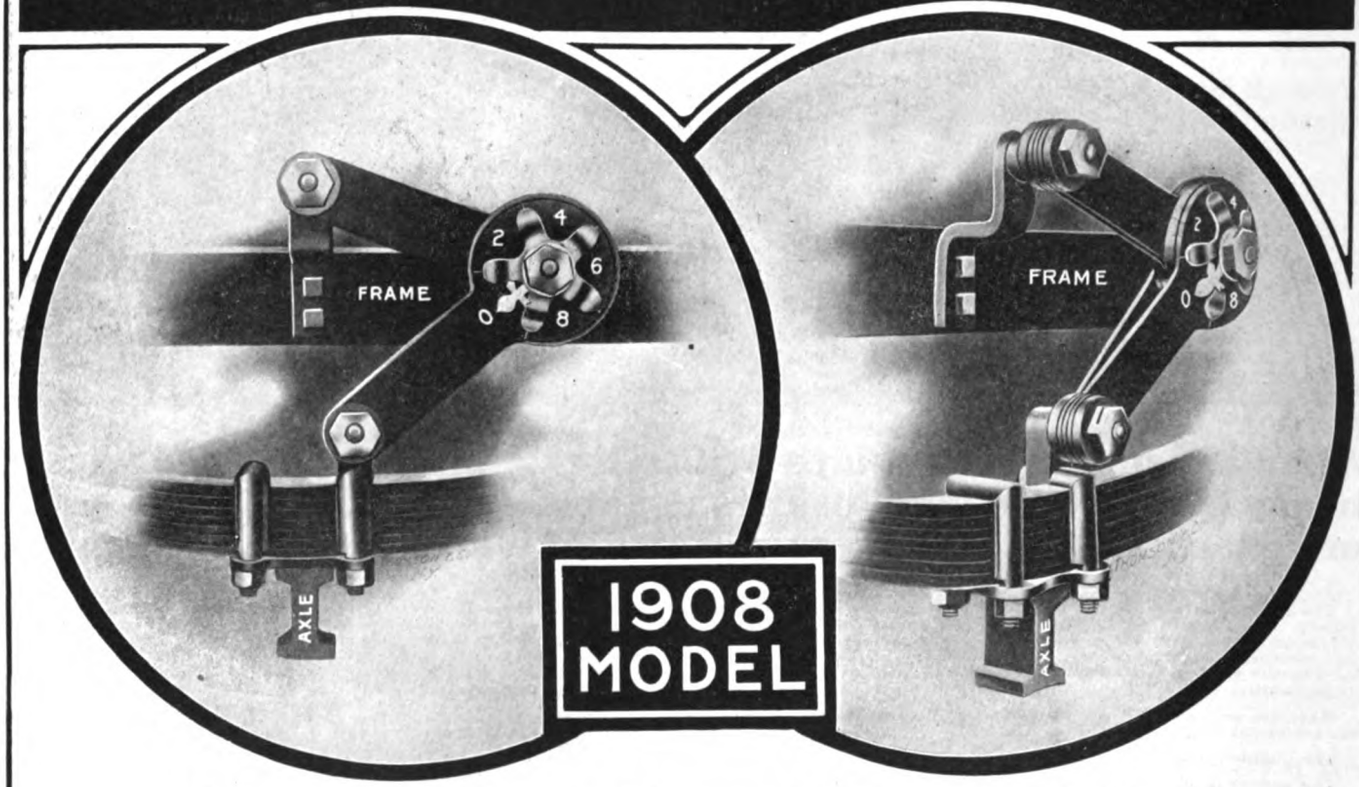
When you sell a man a car equipped with an Eisemann-Lavalette Magneto you can guarantee him freedom from ignition troubles. Our guarantee to you stands behind yours. By using our instrument you greatly reduce his cost of upkeep.

Are you dissatisfied with your present ignition system? We have engineers, specialists in WHAT YOU WANT TO KNOW. We will gladly send one to you to work out your ignition problem for you. Better still, come and see us at the automobile shows. We are exhibiting at all of them.
Grand Central Palace, space F. Madison Square Garden, spaces 120 and 121.

LAVALETTE & CO., 112 West 42d Street, New York

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TRUFFAULT-HARTFORD SHOCK ABSORBER



"Renders Real Rough Road Relief"

¶ The spring action of a car affects its smooth running qualities. Proper control of the springs prevents excessive oscillation, which insures LESS WEAR and TEAR, LONGER LIFE OF TIRES, GREATER SPEED AND GENUINE COMFORT.

¶ This control of the springs can be secured only by the use of TRUFFAULT-HARTFORD Shock Absorber—the device that has made SAFE, ECONOMICAL AND COMFORTABLE automobiling possible.

¶ In the 1908 model we believe that we have practically obtained perfection.

¶ A distinctly new feature has been added, consisting of a regulating dial with indicator, making it possible for even a novice to obtain a perfect and uniform adjustment to suit the exact requirements of the car as measured in terms of its gross weight, and easily secure the maximum benefit.

¶ The Truffault-Hartford is the only spring retarding device manufactured with a regulating dial. It is automatically lubricated, absolutely dust and water proof, interchangeable, practically indestructible and *fully guaranteed.*

¶ Twenty prominent automobile manufacturers now use the Truffault-Hartford Shock Absorber exclusively as part of the regular equipment of their cars.

¶ Write for our "Ruff Road" booklet, Dept. I, or a demonstration will convince you—see us at the shows.

HARTFORD SUSPENSION CO., 66 Vestry St. New York

SEE US AT THE SHOWS

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AJAX TIRES

WRAPPED TREAD

Better Than Ever For 1908 and The Guarantee Just As Good

AJAX-GRIEB RUBBER COMPANY

General Office: N. E. Cor. 57th St. and Broadway, New York

Factories: Trenton, N. J.

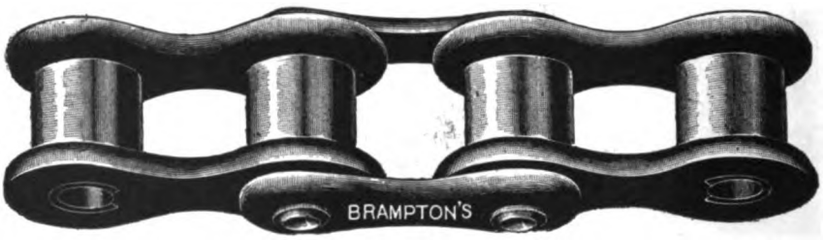
BRANCHES:

Detroit, 743 Woodward Ave.
Chicago, 1418 Michigan Ave.
San Francisco, 438 Market St.
Los Angeles, 1040 South Main St.
Seattle, 1102 Broadway.

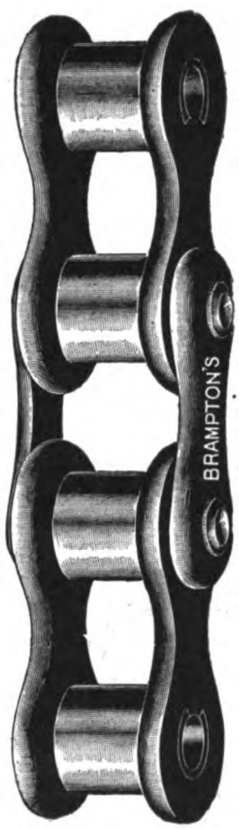
AGENCIES:

Baltimore, 20 St. Paul St.
Philadelphia, 1413 Race St.
Boston, 819A Boylston St.
Washington, D. C., 602-604 E St., N. W.
Pittsburg, 201 Wood St.
Fisher Automobile Co., Indianapolis, Ind.
St. Louis, 3948 Olive St.
Seattle, 1419 Broadway.
Minneapolis, Nicollet St.
Jacksonville, Fla., 317 W. Forsythe St.
Cincinnati, O., 331 East 5th St.
Joseph Strauss & Sons Co., Buffalo, N. Y.
Kansas City, Mo., Maxwell-Briscoe Auto Co.
Dayton, Ohio, Borderwisch & Glancy Automobile Co.
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Porto Rico, 32 Marina, San Juan.
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THE BRAMPTON CHAIN



The **stongest** chain in the world; made of **self-hardening steel** with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

Some chain manufacturers have copied the Brampton chain as near as they could. Their chain somewhat resembles the Brampton chain in appearance, but they have been unable to copy the material **(self-hardening steel).**

No change has been made in the construction of the Brampton chains in the past ten years. **What does that signify?**

Our price list is not copyrighted and our competitors are welcome to use it. One of them has done so, using our numbers, sizes, prices and descriptive matter.

It is therefore easy to be seen that the Brampton chain is The One Standard of the World.

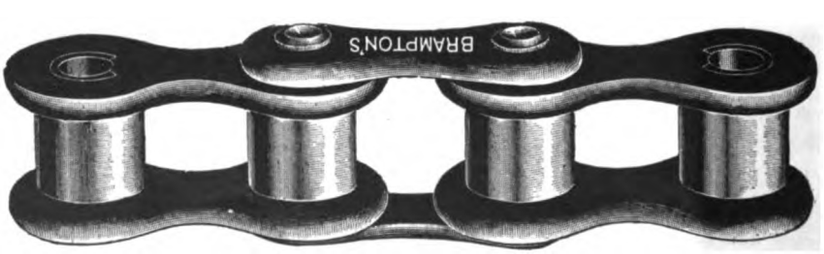
All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitators and get the genuine Brampton.

PRICES THE SAME AS AMERICAN-MADE CHAINS.

We are the Sole American Agents. Catalog on request.

CHAS. E. MILLER, MANUFACTURER, JOBBER EXPORTER AND IMPORTER

PHILADELPHIA BOSTON CLEVELAND



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Price! That's The Rub

The price of the CELEBRATED BRAMPTON CHAINS, (the best in the world) is the same as the American made chains.

Large Sales

make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufacturers, jobbers, dealers and users.

Price Being Equal

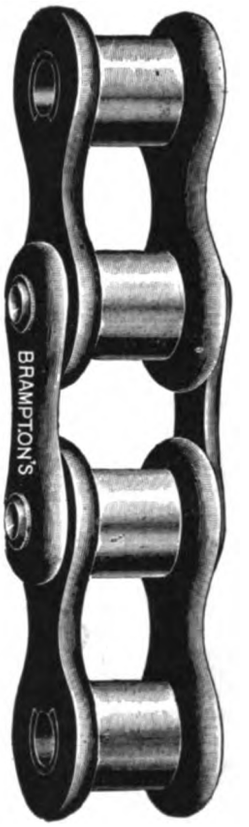
What would you do?

The manufacturers of American motor cars will fit the BRAMPTON CHAIN to your car if you order that way—no extra cost to either you or the manufacturer.

We carry in stock all BRAMPTON Standard Sizes to fit American and Foreign cars.

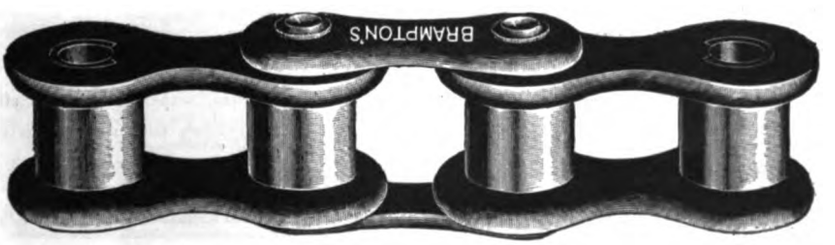
PRICE, the same—QUALITY, that's DIFFERENT.

Agents Wanted in Unoccupied Territory



Home Office, 97-99-101 Reade Street, New York City

DETROIT **BUFFALO** **54th Street and Eighth Ave. NEW YORK CITY**



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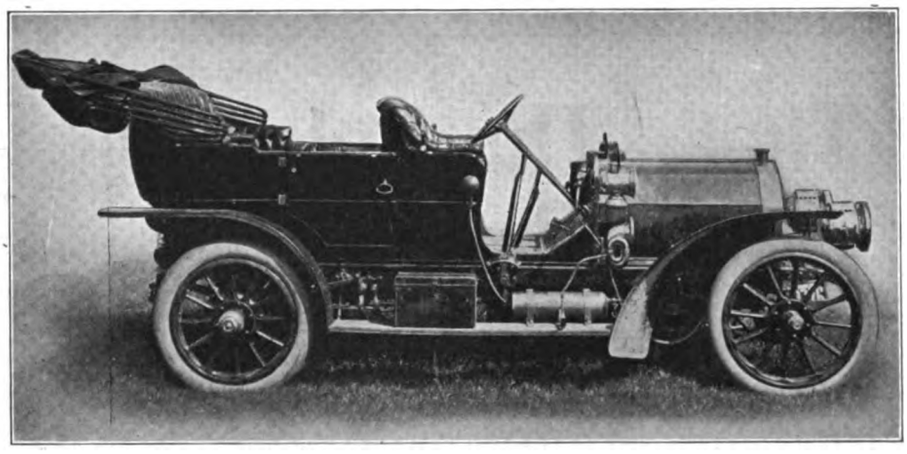
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CHROME NICKEL STEEL
ANNULAR BEARINGS

$2800

VALVE-IN-HEAD MOTOR
ALUMINUM BODY



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Providence, R. I.: Pennsylvania Motor Car Agency, 133 Washington St.
Denver, Colo.: Denver Omnibus & Cab Company, Denver.
Kansas City, Mo.: Mr. Robert V. Jones, 409 New England Bldg.

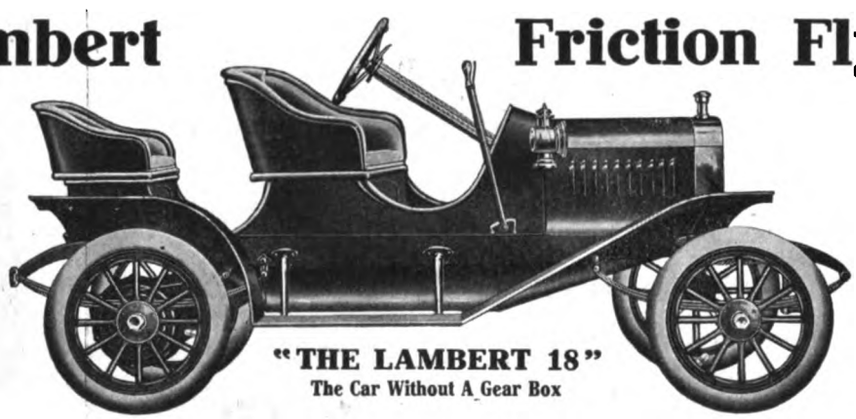
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Brooklyn, N. Y.: Charles F. Batt, 1378 Bedford Ave.
New York: Archer Company, 1597 Broadway.
Spokane, Wash.: L. H. Rose, 1218 Second Ave.
Troy, N. Y.: Lucey Motor Car Company, 231 River St.
Philadelphia, Pa.: West-Stillman Motor Car Company, 253 No. Broad St.
Baltimore, Md.: Rice's Garage, North & Madison Aves.
St. Louis, Mo.: R. T. Harris, Washington Hotel.

Pennsylvania Auto Motor Company, Bryn Mawr, Pa.

The Lambert Friction Flyer 1908

$800



$800

"THE LAMBERT 18"
The Car Without A Gear Box

SPECIFICATIONS.

CAPACITY—Three passengers. WHEEL BASE—95 inches. TREAD—56 inches. FRAME—Pressed steed. WHEELS—30-inch, wood artillery. TIRES—30x3 inch Michelin. MOTOR—2-cylinder opposed, 18 h. p. TRANSMISSION—Friction. SPEED—1 to 35 miles an hour. CARBURETOR—Float feed. IGNITION—Jump spark. RADIATOR—Honeycomb. DRIVE—Single chain to rear axle, encased. BRAKE—External on each rear hub. BEARINGS—Hyatt Roller and Standard Ball. CLEARANCE—12 inches. GASOLINE CAPACITY—12 gallons. LENGTH OF BODY, from inside of dash—76 inches. WIDTH OF BODY, to ouside mud guard—63 inches. WIDTH OF BODY—32 inches. WIDTH OF FRONT SEAT—36 inches inside of cushion. WIDTH OF REAR SEAT—18 inches inside of cushion. HEIGHT OF FLOOR FROM GROUND—29 inches PAINTING—French gray. UPHOLSTERING—Fine quality of leather; springs in cushions and backs of seats. WEIGHT—1,350 pounds. EQUIPMENT—Two oil lamps, horn and full tool equipment. PRICE—$800 complete, f. o. b. factory.

$800 "THE LAMBERT 18" $800

THE BEST VALUE IN AMERICA AT THE PRICE

Ask the best posted mechanic of your acquaintance what he thinks of the Friction Drive, and the answer will be: "The Best on Earth." Ask a farmer and he will not know, because his calling has not required that he keep abreast with the improvements in power transmission—especially as applied to automobiles.

Better still, see the Lambert, have a demonstration—examine the mass of testimony that has come to use unsolicited—we fell sure that the verdict will be: "I will buy a Lambert because it is the simplest, nobbiest and best car on the market for the money." Write for catalogue.

See the Lambert in Section "D" main floor, Grand Central Palace, New York City, Oct. 24-31.

THE BUCKEYE MANUFACTURING COMPANY, *A Few Good Agents Wanted* **ANDERSON, INDIANA**

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AS USUAL The count of solid tire equipment at the Grand Central Palace Show emphasizes the overwhelming superiority of

"Firestone"

Side-Wire Motor Tires—The World's Standard

20 cars equipped with "Firestone" tires
4 equipped with nearest competing make

More Than Twice As Many "FIRESTONE" As All Other Solids Combined

FIRESTONE TIRE & RUBBER CO., AKRON, OHIO

WHY IS IT?

Year after year you see these same cars at the different Automobile Shows? And why is it year after year these same cars use

TIMKEN ROLLER BEARINGS

in their construction?

WHAT IS THE ANSWER?

And this list grows each year—would it grow? Would they continue to use TIMKEN PRODUCTS if they could use anything better, or if there was anything better for them to use? Ask the man who makes good cars.

Here are some of them—look for them at the Shows.

PLEASURE CARS.

Peerless Motor Car Co.	Northern Motor Car Co.	Thomas B. Jeffery & Co.	Cadillac Motor Car Co.
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Conover Motor Car Co.	Royal Motor Car Co.	Autocar Co.	Haynes Auto Co.
York Motor Car Co.	Adams Manufacturing Co.	Olds Motor Works.	Columbus Buggy Co.
Pope Manufacturing Co.	Deere-Clark Motor Car Co.	Bartholomew Co.	Dragon Automobile Co.
Winton Motor Carriage Co.	E. R. Thomas Detroit Co.	Buick Motor Co.	Dorris Motor Car Co.
Babcock Electric Co.	Electric Vehicle Co.	E. R. Thomas Motor Car Co.	Mora Motor Car Co.
Jackson Automobile Co.	Adams Co., England.	Diamond T. Motor Car Co.	And many others
Wayne Automobile Co.	Buckeye Manufacturing Co.	Hewitt Motor Co.	

COMMERCIAL CARS.

Pope Manufacturing Co.	Baker Electric Co.	Reliance Motor Car Co.	Knox Motor Truck Co.
Auto Car Equipment Co.	American Mach. & Mfg. Co.	Oscar Lear Auto Co.	General Vehicle Co.
Logan Construction Co.	Mack Bros. Motor Car Co.	Champion Wagon Works.	Gaeth Automobile Co.
Hewitt Motor Co.	Knox Automobile Co.	Biddle-Murray Mfg. Co.	Iroquois Iron Works.
Rapid Motor Vehicle Co.	Coppock Motor Car Co.	Torbenson Motor Car Co.	American Motor Truck Co.
Meiselbach Motor Wagon Co.	Soules Motor Car Co.	New York Transportation Co.	And many others.

AUTOMOBILES OF BUGGY TYPE.

Holsman Automobile Co.	The Bendix Co.	Mier Carriage & Buggy Co.	Columbus Buggy Co.
Zimmerman Mfg. Co.	W. H. Kiblinger Co.	Kauffman Buggy Co.	Stover Carriage Co.
Success Automobile Co.	Ranger Motor Car Co.	Schact Mfg. Co.	And many others.
	Reliable Dayton Motor Car Co.	International Harvester Co.	

WE WILL EXHIBIT AT

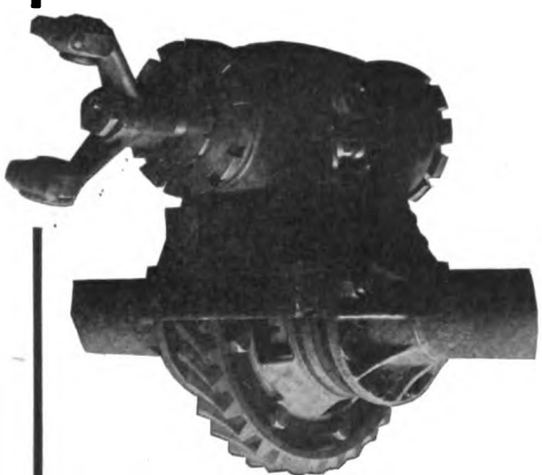
The Grand Central Palace Show	Madison Square Garden Show	Chicago Coliseum and 7th Regiment
New York—October 24-31	New York—November 2-9	Armory Shows in December

THE TIMKEN ROLLER BEARING AXLE COMPANY, Canton, Ohio

Eastern Branch, 10 E. 31st St., New York. Western Branch, 429 Wabash Ave., Chicago.

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HINDLEY SPIRAL GEARS



Especially adaptea

to

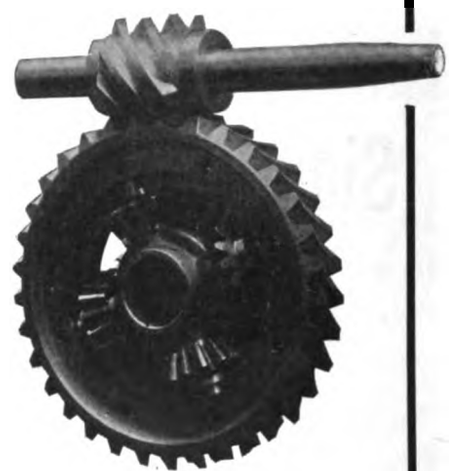
HEAVY TOURING CARS

AND

TRUCKS

These Gears were used on a Mitchell Truck in its run from Chicago to New York.

You are invited to ride in our demonstration car when in Philadelphia.



MORSE, WILLIAMS & CO., *Engineers,* Philadelphia, Penna.

"LONG-ARM" AUTO PARTS

QUALITY—QUANTITY—QUICKNESS—COUNT IN PLACING ORDERS

AXLES—REARS; FULL FLOATING TYPE, SHAFT DRIVE; SINGLE OR DOUBLE BRAKES, QUIET GEARS

FRONTS; SOLID I BEAM SECTION. PADS FORGED ON

All Axles with Plain Ball, "F. & S." or "H-B" Bearings—2 Standard Sizes

CLUTCHES—Cork Insert Design, Cone Type

STEERING REACHES—High-Class, Tube Type

1-in., 1⅛-in. and 1¼-in. BALLS

Also Propeller Shafts, Hand-Levers, Transmissions, and Gear Cutting

SEND FOR DESCRIPTIVE CUTS—QUANTITY PRICES

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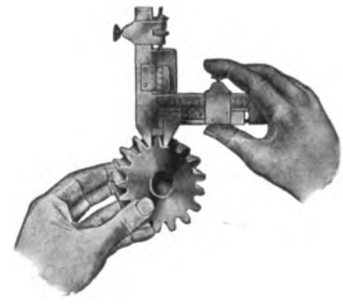
WIDMER MACHINE WORKS, Inc.

Manufacturers of GEARS, PARTS, Etc.



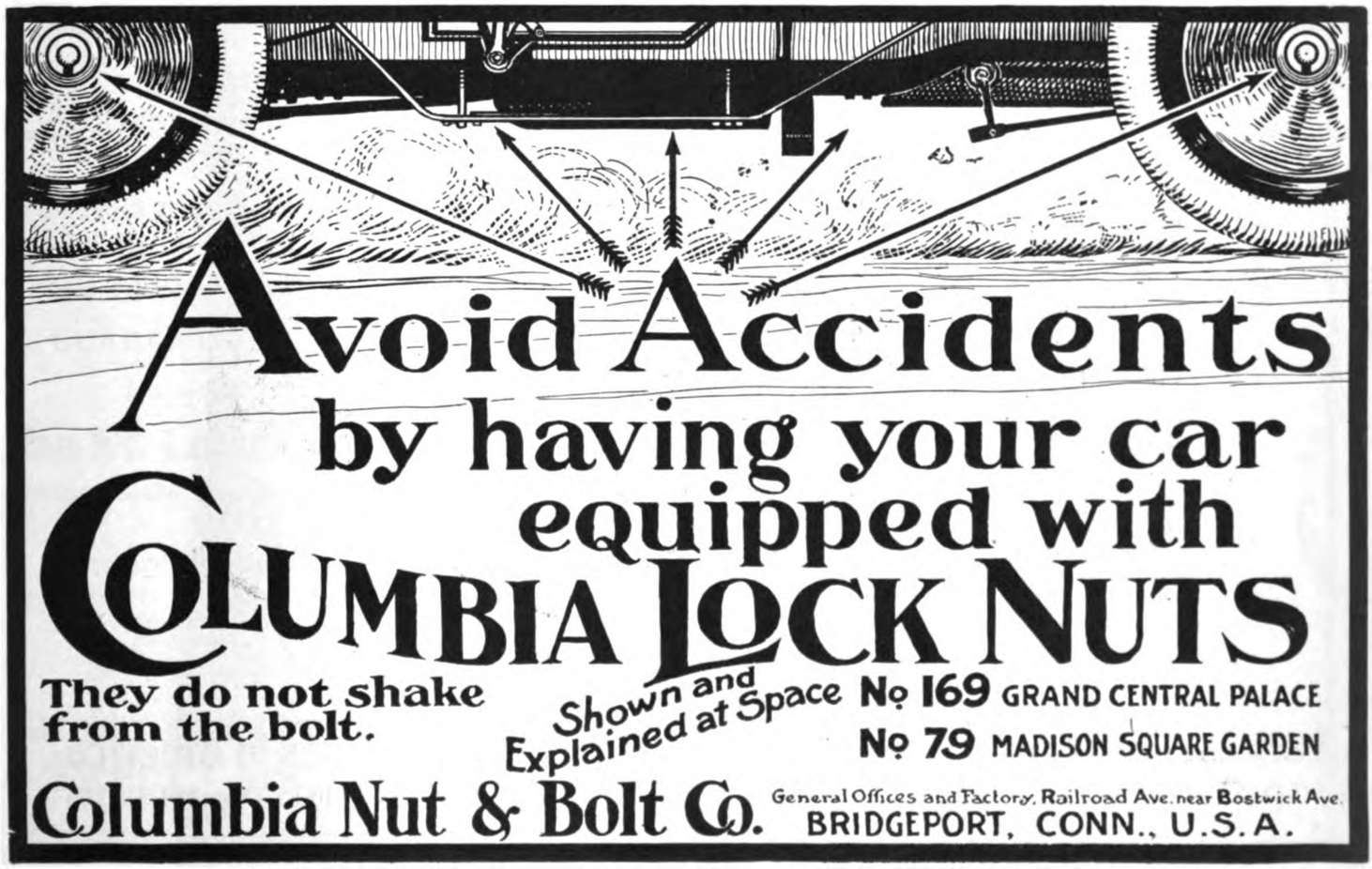
SPECIALTIES—GEARS:
Silent Running Special Filled Gears "Electroide."
Grey Fibre Filled Gears.
Spiral Cut Gears, generated.
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STEERING GEARS:
"NEW DEPARTURE"—entirely new design for heavy cars.
"STERLING," especially designed for trucks.
"LITTLE GIANT," for light cars.



We are prepared to take on high grade machine work.
Send us your blue prints for quotations.

45, 47, 49 Fort Street East, DETROIT, MICH.



Avoid Accidents
by having your car equipped with
COLUMBIA LOCK NUTS

They do not shake from the bolt.

Shown and Explained at Space No 169 GRAND CENTRAL PALACE
No 79 MADISON SQUARE GARDEN

Columbia Nut & Bolt Co. General Offices and Factory, Railroad Ave. near Bostwick Ave. BRIDGEPORT, CONN., U.S.A.

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From Smallest to Largest Pressed Steel Automobile Frames

HIGH CARBON, NICKEL OR CHROME NICKEL STEEL



A. O. SMITH CO.

MILWAUKEE, WIS.

Largest Producers of Pressed Steel Automobile Frames in America

STEEL STAMPINGS OF ALL KINDS

SEND IN PRINTS FOR ESTIMATES

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THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

GUARANTEED FOR ONE YEAR

Send for our Catalog. Address Dept. H

The St. Louis Car Company

Automobile Department, St. Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

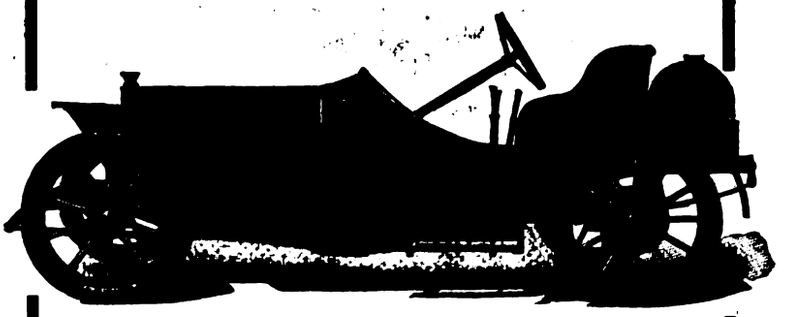
Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

DRAGON

1908 Roadster

35 H. P., $1850



Four 4½ x 4½ inch cylinders, cast in pairs; valves on one side; progressive type transmission, located on rear axle; I-beam drop-forged front axle, roller-bearing rear axle; 96-inch wheel base; drop frame of pressed steel; storage battery ignition; speed up to 55 miles an hour; weight 1,800 lbs.; cone clutch, leather-faced; brakes, 14-inch drums, metal to metal internal and external; ball-bearing front axle and gear box; Diamond tires 32 x 3½ inches. The price includes full equipment of five lamps, horn and tools.

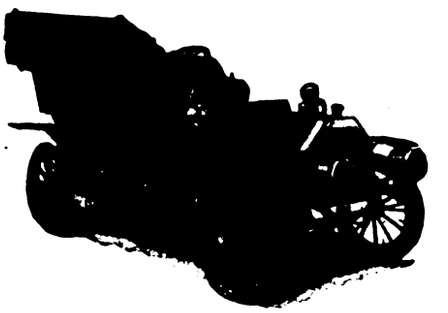
"The Happy Medium Car"

is a phrase that fits the Dragons to a T. They embody only details approved by sound engineering precedent and justified by actual work on the road.

The ambition of the Dragon builders is to give Dragon buyers the best service they can get anywhere for anything like the Dragon prices—long life for the car and small expense for upkeep.

The Dragon Roadster is simple, strong, light and speedy—55 miles an hour if you want it. And it looks the part.

The Dragon Touring Car of 1907 was the best of its class for that year. It needed only the few refinements we have made to make it the best of its class for 1908.



24-26 H. P., five passengers, full elliptic springs in rear, wonderfully easy riding, silent shaft drive, double hub brakes—$2,100 f. o. b. Philadelphia.

The Dragon Automobile Co.

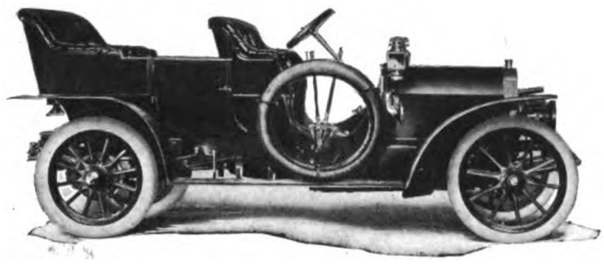
30th, 31st and Chestnut Streets, Philadelphia

Member A. M. C. M. A.

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The 1908

Cleveland



40-45 H. P.
AT
$3,500

presents more really remarkable features than you will find in any other car now offered, no matter its country or price.

¶There isn't a detail that a perfect car should have that is missing from the 1908 Cleveland. There isn't a detail that is unworthy of absolute motor car perfection that is present in the 1908 Cleveland. Every feature could be made a special "selling feature."

¶Such features, for instance, as ignition, lubrication, brakes, and a novel ratchet-sprag, you will find distinctively new. But its many features are so notably in advance of any car so far built that you will have to examine it in detail to appreciate its intrinsic merit.

¶And just consider for a moment the extraordinarily low price at which this 40-45 H. P. Cleveland is offered.

¶If you are not sure just what dealer is handling this car nearest to your home, just drop us a line and we will immediately advise you of his name and address, and enclose a request that he furnish you with a complete demonstration at your convenience.

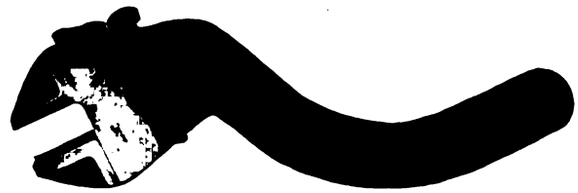
¶If you are a dealer, and have not yet gotten into communication with us concerning this 1908 Cleveland—get busy! It is bound to be the selling sensation of 1908.

¶This car was conceded complete mechanical supremacy over all others by the critics at the Grand Central Palace Show.

CLEVELAND MOTOR CAR COMPANY

GENERAL OFFICES AND SALESROOMS

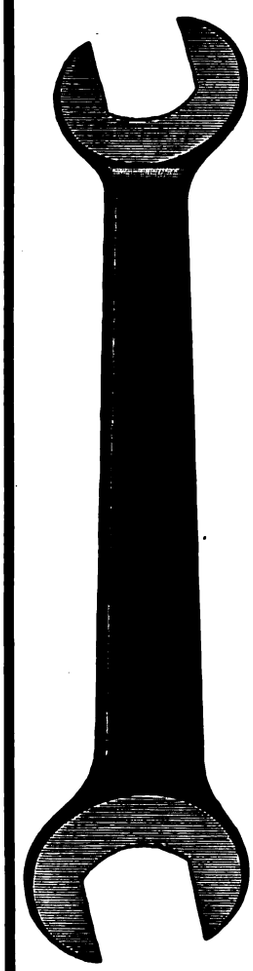
1659 Broadway, New York City



"EVERYTHING DROP-FORGED"

That means that our Auto Tools are the strongest and most durable that can be made. They last a life-time. The steel selected is of the highest grade. In design our tools are thoroughly up to date.





They fit the hand

They are handy to manipulate

They are readily adaptable

They are never failing in use

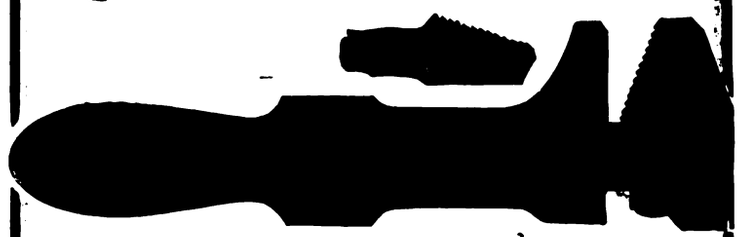
THE B. & S. AUTO WRENCH

is a tool as necessary to your car as the engine itself. Don't fail to get our catalog of Auto Forgings and Tools.

The Billings & Spencer Co.

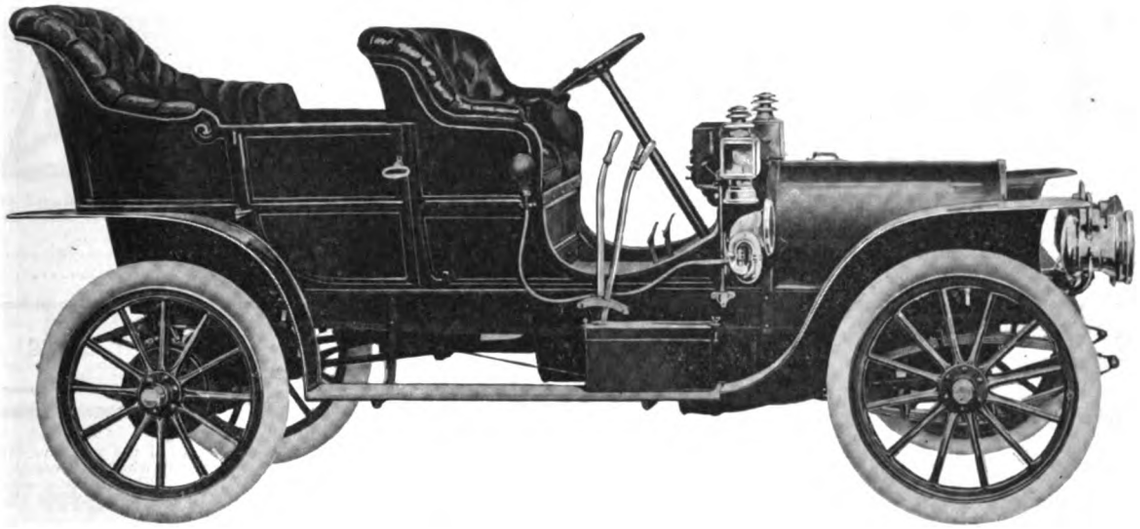
Hartford, Conn.

London: 8 Long lane, Aldersgate St.



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Franklin



Type D—28 h. p. $2850

What do automobilists want?
The automobile that "does things."
What's that?
High power and light weight.
Why?

You'd better look into this question. French makers are already waking up to the public demand for light weight, which produces better results, with less cost, more safety, and more comfort. American makers will follow. Franklin has been high power and light weight since the start in 1902.

The best book on this subject is the Franklin 1908 catalogue. Send for it.

1908 Franklin Models

16 h. p. Runabout, - - $1750	28 h. p. Touring-car or Runabout, $2850
16 h. p. Touring-car, - $1850	42 h. p. Touring-car or Runabout, $4000
Four-cylinder Landaulet, $4000	Six-cylinder Limousine, - . $5200

Prices f. o. b. Syracuse

H. H. FRANKLIN MFG. COMPANY, Syracuse, N. Y.

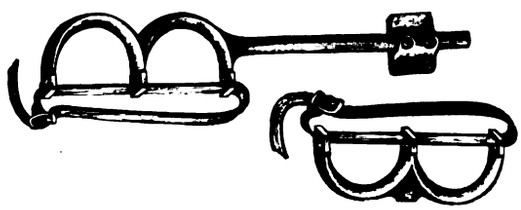
Member Association Licensed Automobile Manufacturers.

We exhibit at Madison Square Garden—the Licensed Show—November 2 to 9

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A Few of Our Domestic Auto Specialties

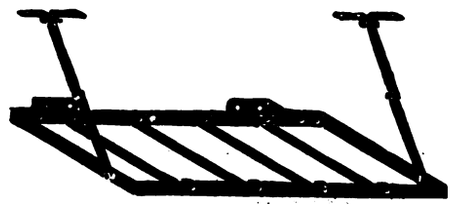
THE ROYAL TIRE HOLDER
Double



Will fit any car and any size tire. Will hold either one or two tires. Set consists of two long and one short piece. Made of extra heavy brass, highly polished and fitted with strong leather straps.

Per set $7.00

LUGGAGE CARRIERS



Made in stationary and folding styles. The braces on the folding carrier are provided with knuckle joints so that when the rack is not in use it can be folded.

Price, stationary $9.00
Price, folding 16.00

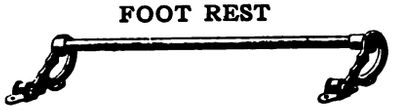
ROBE RAIL



Keeps your robes and wraps from being crushed or mussed in bottom of car. Rails are made of extra heavy brass tubing, highly polished. Made in stationary and adjustable styles.

Price stationary 24 in..... $1.50
Price stationary 30 in..... 1.75
Price stationary 36 in..... 2.00
Price adjustable 30½ in..... 2.50
Price adjustable 30¾ in..... 4.00

FOOT REST



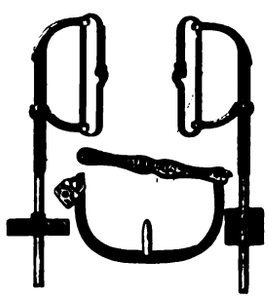
Foot rests enable the occupant of the Tonneau to brace themselves in a comfortable position and also prevent the accidental scratching and damaging of the body of the car. Constructed entirely of heavy brass highly polished and are adjustable.

Price, 32 in.....$5.00

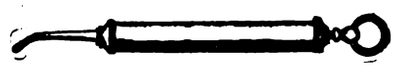
THE IMPERIAL LOCK TIRE HOLDER

Prevent the theft of your Tires by the use of the Imperial Lock Tire Holder. Will accommodate one or two tires of any size and can easily be attached to any make of car. Set consists of two side and one lock bottom piece. Made of heavy bronze, highly polished and fitted with the finest leather straps.

Price, per set..$10.00



OIL GUNS



This is one of the many varieties of oil and grease guns of which we carry a large stock. The No. 125 Oil Gun is a good, substantial oiler. It is well made and is fitted with heavy grip handle.

No. 125, length 16 in., Price.....50 cents

ROYAL SCREW JACKS

Especially adapted for heavy cars. Its lifting capacity is 5,000 pounds. Jack can be raised or lowered by simply turning a lever. It is recommended for garage use.

Price $4.75



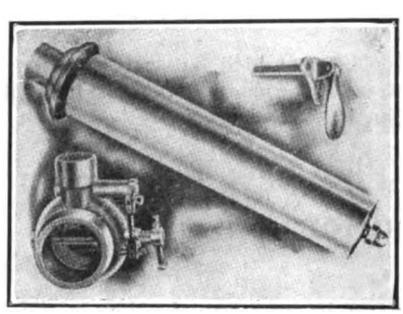
THE PHARE CONTINENTAL
Flare Front Search Light.



Made entirely of extra heavy brass. The Mirror Lens has great projecting power and a focusing attachment enables the adjustment of the range of light as desired. Continental Search Lights are well known for their superior qualities. These lamps are also made with swivel attachment.

Prices from .....$15.00 to $25.00

CONTINENTAL MOTOR CHIME
Four-Tone



This chime can produce a low musical note or a clarion blast, as the "occasion may require." Consists of a single 15-inch tube divided in four compartments, which produce four blended sounds in one.

Price complete, with 1½ or 2 in. Valve..... $15.00
Price complete, with 2½ or 3 in. Valve..... 17.50

The dealer who desires to handle the BEST line of Automobile Specialties would do well to investigate our line of splendid and profitable goods. Our 128 page catalog will be sent upon request.

THE MOTOR CAR EQUIPMENT CO.

Manufacturers, Importers and Distributors of Automobile Accessories

MAIN OFFICE AND WAREHOUSE, 55 WARREN STREET, NEW YORK

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JACKSON

Here are brief hints of the Jackson Line for 1908—

Model E

5-passenger touring car. 35 h. p. shaft drive. 3 speed selective type transmission. 34 inch wheels. 3½ inch tires. 111 wheel base. Price $2000.

Model D

2-cylinder opposed under hood. 24 h. p. shaft drive. 3 speed selective type transmission. 32 inch wheels. 3½ inch tires. 106 inch wheel base. Price $1550.

Model F Jackson Runabout

2-cylinder opposed under hood. Shaft drive. 2 speed planetary transmission. 30 inch wheels. 3 inch tires. 85 inch wheel base. Price $850. 14 h. p.

Model C

2-cylinder opposed under body. chain drive. 2 speed planetary transmission. 30 inch wheels. 3½ inch tires. 96 inch wheel base. Price $1250. 24 h. p.

Gentleman's Roadster

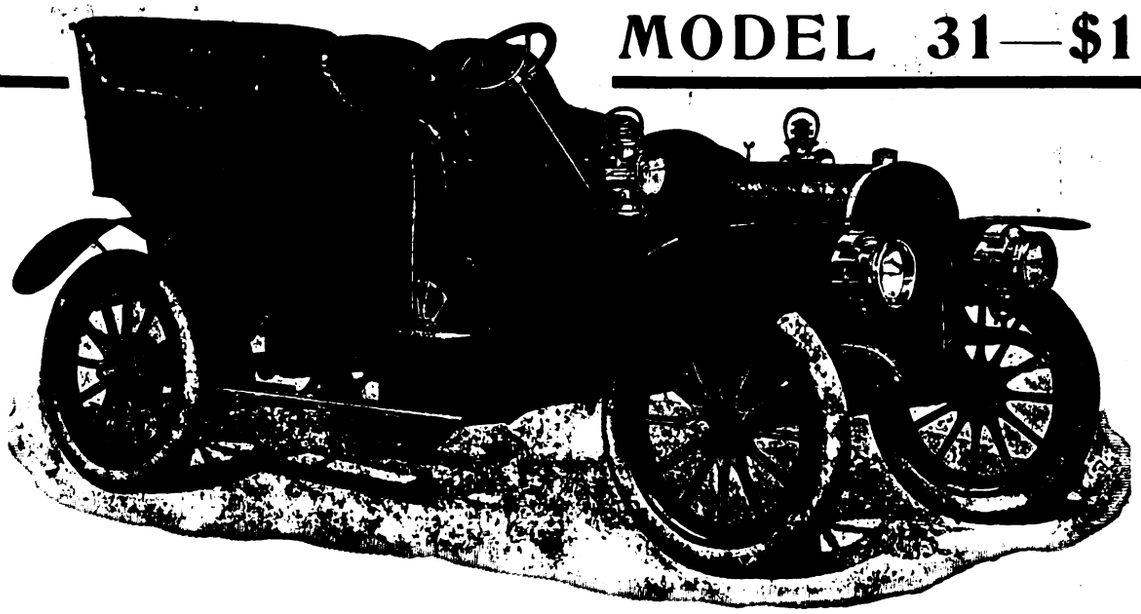
3-passenger. 35 h. p. Shaft drive. 3 speed selective type transmission. 34 inch wheels. 3½ inch tires. Speed 60 miles. Price $2000.

JACKSON AUTOMOBILE COMPANY

JACKSON, MICH.

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MODEL 31—$1400



THE UTILITY CAR

For the man desiring a car for steady, daily service with the lowest possible cost of operation, care and maintenance the two-cylinder

Rambler

remains supreme.

There are more of these cars today in constant, daily service than of any other make on the market and their unfailing reliability has been proven beyond question wherever automobiles are used.

If you are in or near New York visit the display of the full 1908 line at

Homan & Schulz Company

38-40 West 62d Street or if not send for catalog

THOMAS B. JEFFERY & COMPANY

MAIN OFFICE AND FACTORY: KENOSHA, WIS.

BRANCHES AND DISTRIBUTING AGENCIES: Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, October 31, 1907. No. 5

SMITH SPEAKS OUT FOR ONE SHOW

Chairman of A. M. C. M. A. Committee Declares Himself at Annual Lunch—Other Subjects Discussed.

Unexpectedly the first gun fired at the almost intolerable two-show situation was publicly touched off at the annual luncheon of the American Motor Car Manufacturers Association in the Hotel Manhattan, New York, on Tuesday last, 29th inst.

The man who fired the gun was none other than H. O. Smith, chairman of that association's show committee, which fact gave added force to his remarks. Mr. Smith not only expressed the opinion that the time had arrived when there was room, or at any rate, there should be desire for but one truly national show representative of the whole industry, which should be held neither in October or January, but in July or August, and that it should be a show not for the public, but for manufacturers and dealers only. The shows for the public, he said, should be local shows, held in the spring, by the local trade organizations.

Mr. Smith led up to his address, which was brief and pointed, by firing a shot also at the practice of exploiting new models each year, which practice, he said, was surely passing, but while it prevailed, and coupled with the present system of shows and their dates, the best interests of the industry were not being served. He said the subject had been discussed by the A. M. C. M. A. show committee, but added that his remarks represented merely his personal views.

Gen. George Moore Smith, chairman of the Automobile Club of America's show committee, in what may be described as a real nice tone of voice, found fault with the big cars now in vogue. He does not consider seven passenger cars desirable and thinks that the lengthening of wheel bases has been carried too far and resulted in a type of vehicle suggestive of those designed for carrying theatrical scenery and telegraph poles. The result has been overloading and a general increase of tire expenses and other costs of upkeep. Lighter and shorter cars of moderate power are more desirable from every point of view. Having lodged his complaint, the General congratulated the A. M. C. M. A. on its growth and success and advised makers generally to turn more of their attention to commercial vehicles. In due course, Benjamin Briscoe, chairman of the A. M. C. M. A. management, returned the compliment by congratulating the A. C. A. and thanking it for its co-operation.

Of course, Winthrop E. Scaritt attended the luncheon, and, of course, he was called on to make a speech. He went soaring, as usual, without the aid of a balloon. He predicted that the motor fuel of the future would be radium. A speck on the point of a knife, he said, would furnish sufficient power to drive an automobile daily for twenty-five years. No one challenged the statement.

Diezeman in Receiver's Hands.

Following the filing of a petition in bankruptcy against the Diezeman Shock Absorber Co., New York, Judge Holt on Monday last, appointed W. H. Smith receiver for the concern. The petitioning creditors are Charles L. Kohler, $808; Theo. Cohn, $450; and W. A. Feuchs, $100, all on notes. It was alleged that the company is insolvent, had made preferential payments of $2,000, and transferred merchandise and accounts amounting to $2,000. The liabilities are over $32,000, and assets $7,500, principally in the factory at 1311-1313 Hudson street, Hoboken.

Badger Brass After Infringers.

Having acquired the American rights of the famous Besnard system, the Badger Brass Mfg. Co. means to protect them. Already legal warnings have been served on three lamp makers whom the Badger people consider are attempting to infringe their rights.

MAKING CONTINENTALS IN AMERICA

German Tire to be Reproduced Here—Tischbein Says Demountable Rim Tends to Solve Tire Problem.

On October 24th, the American Continental tire made its first formal appearance on the American market. It is in every detail a faithful reproduction of the tire made in the parent factory of the Continental Caoutchouc Co., at Hanover, Germany, which heretofore has been supplied by the American company. On the same date, there went into effect a new scale of American prices, in the making of which the fact that both freightage and import duties now are avoided met with full and proper consideration.

That the Continental people were preparing to market an American made tire has been a closely guarded secret for the better part of two years. The first ones were made in 1906 for use on certain of the American cars that participated in the Vanderbilt cup race, but they were not used for that purpose. Since that time, the arrangements for quantity production have been gradually developing but nothing concerning them was permitted to escape until every detail had been perfected and the American product had been so thoroughly "tried out" by actual usage as to receive the unqualified O. K. of the experts of the Hanover factory. All this has been effected and the American tire now is in being, and in no way can it be distinguished from the imported product.

The American Continentals are being made in the big plant of the Revere Rubber Co., at Chelsea, Mass., which company is one of repute and long establishment, and which employs about 1,000 operatives. The affiliation and working agreement between the Continental and the Revere companies is very intimate, E. S. Williams, general manager of the latter being also a director of the former, while the superintendents of

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the Continental department in the Chelsea plant and of the Continental factory in Hanover have exchanged visits and spent several months at several different times in their respective plants in order that the reproduction of the processes and of the completed tire shall be exact. The German superintendent is none other than Dr. Albert Gerlach, who is of wide renown as a chemist and rubber expert in Europe. It was he who passed final approval on the American tire.

Willy Tischbein, who is the managing director of the Hanover plant and also president of the Continental Caoutchouc Co., of America, came over to attend the "launching" of the American product. He is now in New York and expressed himself as being thoroughly satisfied with the situation. In the course of a conversation, he departed from tires for a moment to give as his unqualified opinion that the demountable rim represents the final solution of the so-called tire problem. The Continental rim of this type, which now is being shown in America for the first time, and which also will be manufactured here, already is well known and is in gradually increasing use in Europe. Practically all tire troubles, Mr. Tischbein said, arise from the first hurried repair made on the road. The chauffeur is flurried or nervous and, as a result, sand or small stones get between the tube and the shoe; or the tire is insecurely fastened to the rim or insufficiently inflated and more trouble ensues. With a demountable rim all this is avoided. The spare tire is always inflated and ready for quick and instant application, and the punctured one may be repaired properly and at the leisure of the driver. These considerations are so great and so far reaching that while it may be slow of attainment, Mr. Tischbein believes that the final triumph of the demountable is beyond question.

So far as the marketing of the American Continental tire and rim is concerned, there will be no change. That work will be performed by the Continental Caoutchouc Co., with Joe M. Gilbert as its manager, and from his headquarters at 43 Warren street, New York. Gilbert, however, insists that the work is not work, but pleasure.

Firestone Opens Philadelphia Branch.

The Firestone Tire & Rubber Co. will this week open a branch in Philadelphia at 256 North Broad street, which is in the heart of the automobile district. It will be one of the largest establishments of the sort in the East, having a total floor space of 14,250 square feet. W. R. Walton will be its manager.

Detroit Auto Vehicle Assets for Sale.

The public sale of the assets of the bankrupt Detroit Auto Vehicle Co., Detroit, Mich., has been set for November 5th. The property will be sold either in bulk or in parcels.

The Week's Incorporations.

Bloomfield, N. J.—Torbenson Motor Car Co., under New Jersey laws, with $500,000 capital; to manufacture automobiles and motors. Corporators not named.

New York City, N. Y.—Pardee Motor Co., under New York laws, with $10,000 capital. Corporators—William J. Jackson, Leon B. Smith, and W. H. Webster, all of New York City.

Ithaca, N. Y.—Thomas & Grant, under New York laws, with $25,000 capital; to make automobile and marine engines. Corporators—C. C. Thomas, F. W. Grant and F. A. Cobb, all of Ithaca.

Jersey City, N. J.—Advance Engine & Mfg. Co., under New Jersey laws, with $25,000 capital; to manufacture automobiles, motors, etc. Corporators—H. O. Coughlin, A. C. Bear and John R. Turner.

Kittery, Me.—American Auto-Ad Co., Motors, under Maine laws, with $700,000 capital. Corporators—O. S. Paul, president, Kittery, Me.; H. P. Knowlton, secretary and treasurer, Malden, Mass.

South Orange, N. J.—Brick Church Automobile & Supply Co., under New Jersey laws, with $100,000 capital. Corporators—Amelia Hull, New York City; John B. Todd and Melvin O. C. Hull, South Orange.

Alexandria, Va.—Flynn Motor Car Co., under Virginia laws, with $15,000 capital; to do general automobile business. Corporators—J. J. Flynn, president, F. M. Scott, secretary-treasurer; H. I. Quinn, vice-president, all of Washington, D. C.

Gloversville, N. Y.—Gloversville Auto Glove Co., under New York laws, with $25,000 capital; to make automobile gloves. Corporators—F. S. Mills, E. J. Wilkins, S. B. Morrell, and E. W. Mills, all of Gloversville.

Rochester, N. Y.—F. A. Brownell Motor Co., under New York laws, with $400,000 capital; to manufacture automobiles, cars, boats, etc. Corporators—F. A. Brownell, W. A. Dunn and W. Deinberger, all of Rochester.

Omaha, Neb.—Bearing Company of America, The, under Nebraska laws, with $150,000 capital; to make bearings for automobiles. Corporators—Arnold C. Koenig, George J. S. Collins, Lysle I. Abbott and Will F. Seidentopl.

New York City, N. Y.—Standard Auto Rolling Chair Co., under New York laws, with $500,000 capital; to manufacture motor rolling chairs, automobiles, etc. Corporators—J. H. Kahrs, L. Albert, and L. J. Gregory, all of New York City.

In the Retail World.

The Wilson Trading Co., one of the old-line cycle jobbing houses of New York, will, on December 1st, open a retail store at 46 Cortlandt street. Automobile accessories also will be handled.

The Longacre Motor Co. will open its new garage at 48 West Forty-third street, New York City, this week. The company, of which J. Hovey Hill is president, will transact a general garage and renting business.

The Favorite Automobile Company, backed by W. C. Favorite, has been formed in Chicago and will open a garage at 1253 Michigan avenue. Charles W. Price, formerly with the Maxwell agency, has been secured as manager.

Fire in the Capen Motor Car Company's garage at 4739-43 McPherson avenue, St. Louis, Mo., October 17th, threatened for a time to destroy 45 cars. Prompt work by employes prevented a spread of the blaze. The damage was only $1,200.

A. E. Gilmore, one time manager of the Rambler branch in Boston, and latterly connected with the White Co.'s New York depot, has doubled up with Charles E. Whitten, also well known to the New England trade, and secured the Thomas agency for Boston and vicinity. They will operate as the Whitten & Gilmore Co.

Oscar A. Eskuche and Mitchell Mackay have formed the Commercial Automobile Co., which will look after Logan interests in Milwaukee. The firm has secured temporary quarters at Eleventh street and Grand avenue, pending the erection of a large garage to be located at Twelfth and State streets.

The Rees Co., which less than a year ago set out to engage in "advanced garaging" at 42 West Sixty-second street, New York, "went broke" on Tuesday last, when four creditors representing small amounts, filed a petition in bankruptcy on the concern. It was incorporated in January last with capital stock of $120,000, which amount was increased to $160,000 in August.

Charles E. Miller, the well known New York manufacturer, jobber and exporter, has added another link to his extensive chain. He has leased the large store at 1392 Bedford avenue, Brooklyn, and will be ready for business there in a couple of weeks. Hardly had this announcement been made when he closed contract with the Hartford Rubber Works Co. for the exclusive agency for Hartford and Dunlop tires in that Borough.

Judge Seabury, of the Supreme Court, has appointed Hugh F. Weston receiver for the Auto Operating Co,. 305 West Seventy-ninth street, New York City, under a bond of $20,000. The company is being sued for an accounting by its president, Charles F. Keuerleber, against David J. Curran, treasurer, and William J. Curran, secretary. The company was incorporated in December last year, with $10,000 capital, of which the president held one-half, and the Currans the remainder. An automobile livery was maintained at Lakewood and at Manhattan, Beach the gross receipts of which were $10,351.

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SOME SHRINKAGE IN SEPTEMBER

Month's Export Losses Widely Spread, but Total Shows Impressive Increase—Where Ground was Lost.

While the grand total for the nine months shows an impressive increase, September proved an off month for the export of American automobiles and parts, as disclosed by the report of the Bureau of Statistics at Washington. The reason for the shrinkage that occurred is not apparent, but the fact remains, nevertheless. As compared with the corresponding month last year, losses are shown in seven of the geographical groups recognized, while the total exports during September of this year are $95,886 smaller than during September 1906, while there is a loss of nearly 50 per cent. over last month.

Were it not for the total, which shows a gain on the whole, it might be thought that America is losing its hold in British domains, to the degree that it is strengthening its position in France. The United Kingdom, British North America and British East Indies all show losses for the month, the first-named with a decrease of almost 50 per cent. as compared with the figures for September, 1906. Italy also jumped over to the debit side, in contradistinction to its position last month. France shows a gain of $3,997. Other Europe, West Indies and Bermuda, South America, British Australia and Africa have substantial gains.

Better results are shown, however, in the totals for the nine months ending September, substantial gains predominating. The table is apt to be confusing as the returns for 1907 are for nine months, while those of 1906 are quoted for six months. The totals show an apparent gain of $680,294 for the nine months, as compared with the six months of 1906, with an actual increase amounting to $2,738,252, as set against the corresponding period of 1905. The total number of cars exported during the month was 113, as against 177 during September, 1906. During the nine months 2421 cars have been shipped abroad, their total value being $4,442,478, exclusive of parts valued at $521,407.

Neighbors Object to Garage.

Eugene N. Foss, who is landlord of the garage on Newburg street, Boston, occupied under lease by the Locomobile Company of America, is somewhat victimized in having built a $67,000 structure for such use on land restricted against any buildings "offensive to the neighborhood for dwelling houses." Mr. Foss had begun the erection of the garage when Charles R. Evans, owning land near by, got an injunction against him. Purchase of the Evans property for $18,000 settled that matter. Later several other neighbors got busy and on October 22, Judge Loring, in the Supreme Court at Boston, issued an injunction on their application, restraining Foss and the Locomobile Company from using the building for automobiles. The matter is to be taken to the full bench of the court.

Marmon Will Study Methods Abroad.

Howard C. Marmon, of the Nordyke & Marmon Co., and designer of the Marmon car, will leave for Europe immediately after the shows. Although his own genius is of well proved fertility, he thinks it possible that the old country may offer some ideas which might still further add to the attractiveness of the car in which he is so wrapped and he goes abroad with that idea in mind.

Baltimore Show Dates Fixed.

Baltimore dealers will hold their annual show the week of November 16 to 23, in the same building in which it was held last year, namely the large garage at Maryland and Mount Royal avenues. B. R. Johnson, who managed the exhibit last year, will assume charge of the show this year.

Bates Will Make Spark Coils.

Charles Bates, with whom is associated Dr. J. H. Wellings, has leased the old Bijou theatre building in Lansing, Mich., and will convert it into a factory for the production of the Pearson spark coil. It is expected that the plant will be in operation before January 1st.

Robbins to Represent Rainier.

A. M. Robbins, formerly eastern manager for the Aerocar Co., now will go west. He has engaged as manager of the Rainier branch in Chicago.

	September		Nine months ending September		
Exported to—	1906 Values.	1907 Values.	1905 Values.	1906 Values.	1907 Values.
United Kingdom	$69,365	$39,321	$554,646	$1,021,908	$1,503,791
France	33	4,130	251,840	271,319	532,383
Germany	4,092	5,338	93,836	111,767	158,274
Italy	4,747	655	152,585	239,744	242,191
Other Europe	7,434	9,816	214,914	178,689	261,061
British North America	110,088	50,250	483,050	766,431	1,086,541
Mexico	61,199	25,583	136,578	546,064	512,682
West Indies and Bermuda	1,728	12,589	112,278	203,169	222,311
South America	19,050	31,514	42,367	103,459	185,054
British East Indies	2,722	1,748	24,982	26,267	28,711
British Australasia	12,956	19,004	81,505	100,913	154,490
Other Asia and Oceania	12,654	10,379	59,273	57,189	59,863
Africa	841	1,438	26,021	10,672	7,489
Other countries	850	108	1,758	6,588	9,038
Total	$307,759	$211,873	$2,235,633	$3,644,179	$4,963,885

FOREIGN MISSION FOR REEVES

A. M. C. M. A. to Send Its Manager Abroad to Investigate Export Opportunities—Plans are Comprehensive.

Believing that the foreign field, which has been overtilled by the makers of large, ponderous cars, offers opportunities for the American type of car, the committee of management of the American Motor Car Manufacturers' Association, at its meeting in New York on Monday last, delegated its general manager, Alfred Reeves, to visit the London and Paris automobile shows next month and generally to study foreign conditions, with a view of paving the way to a more aggressive campaign.

The best methods for selling cars whether through agents or branches; the plan of advertising campaign that should be followed, and other details are to be carefully investigated.

It is very well understood that marketing cars abroad cannot be done without a thorough understanding of the situation and the report of the investigations made by Mr. Reeves when placed before the big makers of this country, are expected to be of considerable interest. One of the large suggestions that has been broached revolves around an idea of a combined exhibit of American cars at the foreign shows of next year, to be participated in by all the members of the A. M. C. M. A., whose total output for 1907 is estimated at about 37,000 cars.

Reeves has been a prodigious worker in his capacity of manager of the association, and while he is quick to absorb ideas, if the snuff of salt water serves merely to refresh or add to his vitality, the organization will be well repaid.

At Monday's meeting it was decided to work further on the matter of admitting gasolene trucks to the docks and piers of New York, and to start a campaign in other seaboard cities. About half the docks in New York now permit their use.

There were interesting reports from the Committees on Good Roads, Legislation, Freight, and other departments that are in operation.

The idea of a stock chassis in the spring was strongly endorsed, with the explicit provision, however, that it be under proper management. It was recommended that it be held early in May.

B. F. Everitt, of the Wayne Automobile Company, was elected a member of the Committee of Management.

In attendance at the meeting were Benjamin Briscoe (Maxwell), chairman; R. E. Olds (Reo); W. H. Van Dervoort (Moline); Charles Lewis (Jackson); C. C. Hanch (Marmon); J. B. Bartholomew (Glide); A. C. Newby (National); and Charles E. Duryea.

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Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, OCTOBER 31, 1907

For One Show Only.

It requires no very extended inquiry to discover that at least every other man identified with the industry is unfeignedly weary of the two-show situation.

The strain, physically, mentally and financially, that has endured during the last three years has been sufficient to cause many of them to openly and profoundly wish that a means were found to relieve a situation that has become almost intolerable and of the number so disposed it is quite natural that a majority should be men who have to do with the manufacture of parts and accessories.

With the chief point of difference that caused the automobile manufacturers to draw apart and travel two separate roads these accessory men had nothing to do and with it they are but indirectly concerned. But despite the fact, the burden, or at least the show burden, has fallen most heavily on them. They practically have been compelled to follow both armies. It is not strange, therefore, that some of them are wearied almost to the point of crying "Enough" and that they should crave the relief to which they are entitled, but which under present conditions is so difficult of attainment. There are some of the automobile manufacturers, who, while more cautious of expression, it is plain to see are similarly minded.

It is possible, of course, that given time enough the situation will solve itself. Carried to its logical conclusion, one or the other of the two nominally opposing factions must become exhausted. But of this end there is no pronounced evidence in sight, and whether it is wise to pursue a policy of exhaustion is a grave question.

Since two shows became the vogue, things have changed mightily and as one of the thinkers of the trade remarked but a few days since, it does seem, if they will not bury the bone of contention, that the two armies, both enlisted in a common cause, can well afford to no longer quarrel over it in public. So far as shows are concerned, he would have the Selden patent and all its issues forgotten. He would have but one show and that a truly national one. If the Automobile Club of America desires to interpose objections, or to assert "prior rights," he would bowl it out of the way, gracefully, if possible, but bowl it, anyway. It has secured its full pound of flesh and more from show promotion and can well afford to retire with good grace. If it appears that qualification is necessary to weed out the undesirables and those to whom the business is but a game, this thinking man would have an exhibitors' qualification established, either in respect to age or standing, or to price of show space. But above all arises the desire for one show and one show only.

That this man voiced more than his own opinion is certain. It probably is an opinion that will be discovered beneath the skin wherever it is scratched. The trade as a whole may be said to have wearied of the double show bill. Many of the accessory makers are undisguisedly so; so too, are, very many dealers, and indications are not wanting that press and public are about becoming tired of "too much of a good thing."

They are wise who are able to read handwriting on the wall and who are able also to profit by it. The obstacles are many, but where the cause of the whole industry and not of any part or parts of it are to be served, there should exist a disposition to bear and forbear, and to give and forgive, and there should arise men strong enough to turn the disposition into its natural channel. The proverb regarding the house divided against itself seems now to apply, and with the accessory men caught between the two walls of the house, it seems logical that from their ranks should come the men to meet the occasion and who will lead to the cementing of the breach and to one show.

The unexpected but timely public pronouncement of views in line with these opinions, as expressed by Mr. H. O. Smith, chairman of the American Motor Car Manufacturers Association show committee, at that organization luncheon in New York on Tuesday last, is evidence that the "getting together" necessary to effect the consummation so devoutly wished for should prove easier of accomplishment than seemed possible a week ago.

Friction in the Factories.

Preparations for the 1908 outputs being well under way, and the makers as a rule being about ready to go ahead with quantity production, it is borne in upon the factory man and the salesman alike, that the season is at hand when the commencement of deliveries will begin to make inroads upon stock in hand, and frequently on stock supposed to be on hand. The thought at once conjures up a vision of irate sales departments, urging the factory by all the known gifts of destiny to send cars at any cost; of dim lights burning all night in the shops where toiling hands are sweating out the work; and later by weeks or even months, of a second series of libelous attacks on the men in overalls, because the cars were

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got out in too much of a hurry, and are not fit for their work.

Another phase of the vision presents these same production and selling departments in heated conflict over structural details which are held to be at fault, or satisfactory, according to the point of view. It shows bickerings and strife, and even where the question of rate of production and actual saleability of the product is not at all in doubt, more or less of "pull-hauling" between what are essentially two equally essential branches of the same undertaking. But why it should be that the salesman should feel imposed upon when the cars go wrong, and lay the blame upon the factory, or why the factory should blame the salesman when cars are thrown back for renewal of parts, is not distinctly apparent to the outsider. Only the factory man and the salesman know that it is so.

Evidently the question resolves itself into a consideration of system or lack of system to a great extent, tempered with the existence, or lack, of a proper spirit of co-operation between the departments, which enter into the business. The lack of proper sympathy between the heads and hands of the shops and agencies, and the ruffled tempers it often produces appears in a superficial way, to affect only the feelings of the men themselves, and to have small influence over the success or failure of the season's business. But in reality it acts directly on the profit balance of the maker and to a costly degree.

No one element in the business should be permitted to dominate another. All must come under one head and be governed by it. The dictatorial attitude of the sales department, frequently is bred of a broader understanding of market values and commercial merit than is the opposition arrayed against it. Similarly, production is governed by certain fixed laws of an economical and technical nature which not every salesman can understand. Only the administration is capable of overseeing completely the operation of all departments, and that fact should be understood throughout the organization. Manufacturing and selling departments perhaps to an almost universal extent, should be more in sympathy. More than that, the manufacturer himself, should always have his ear to the ground to detect any signs of aggression on either side, and suppress it, not alone as a policy of good government, but because the interests of the business demand it.

HEAVY FINES AGAIN IN PROSPECT

New York City's Failure to Erect Signs Nullifies Its $10 Tariff—Imprisonment for Third Offenses.

By a unanimous decision of the Appelate Division of the Supreme Court last week, the ordinance passed by the Board of Aldermen of New York City limiting the fine for overspeeding by automobilists to $10 for each offense, is declared illegal, as not conforming to the provisions of the State motor vehicle act of 1904. Ever since the much talked of decision of Justice Truax, early in August, when he held that the ordinance of the Board of Aldermen on the speed question superseded the State motor vehicle law, New York city magistrates have dealt with the alleged offenders, and instead of sending them to the Court of Special Sessions for trial, as had hitherto been the custom, have merely imposed nominal fines.

The decision of the Appelate Division was rendered in the case of William H. Hainer, who was held for Special Sessions, but who secured release from custody on a writ of habeas corpus. His arrest was used as a test case to determine the validity of the city ordinance, and to expedite a decision on appeal. Justice Truax, in the Supreme Court, upheld the writ and ordered Hainer's discharge. District Attorney Jerome at once took appeal, and his position was confirmed by the unanimous finding of the higher court, which means that the city ordinance is illegal. Hainer must therefore return to custody.

Hainer was arrested under the provisions of the State law of 1904 which makes overspeeding in the city limits punishable for the first offense by a fine not exceeding $100; for the second by a fine of not less than $50 nor more than $100, or imprisonment for thirty days, and for a third or any subsequent offenses by a fine of not less than $100 and imprisonment for thirty days. Offenders must be held for Special Sessions and tried there.

Under the provisions of the State vehicle act of 1904 municipalities were empowered to regulate the speed of such vehicles by special ordinances and under this provision the Board of Aldermen a year ago passed an ordinance superseding the motor vehicle law within the city limits and making the only punishment for overspeeding a summary fine in a magistrate's court, of not more than $10 for each offense, despite the fact that the State law specified that such cases be sent to Special Sessions, and also named the punishment for convictions.

The decision of the Appelate Division is of more than ordinary interest, both from the fact that it is of the utmost importance and that a fine point of law is involved in the finding. Justice Clarke, writing the court's opinion, says that the sole question at issue is whether the city ordinance complies with the requirements of the motor vehicle law under which it was authorized.

Justice Clarke holds that wherever a special ordinance is made by a city or village "such city or vilage must" erect signs on every street or roadway affected by the ordinance, warning vehicles to slow down on that street or roadway to the speed limit. As no attempt has been made by the city to erect such signs throughout the city streets, Justice Clarke says, it is plain that the legal requirements authorizing the city ordinance were not complied with. Hence the ordinance is void of all legal value and cannot be respected by the courts until the necessary signs, which must be conspicuously displayed, are erected on every city street and roadway.

Following this reasoning Justice Clarke and his colleagues find that Hainer's detention for Special Sessions was justified, and the order of Justice Truax upholding the writ is reversed and Hainer remanded to custody.

As a result of the decision the special sessions court now has disposal of nearly four hundred cases which had accumulated because of varying decisions as to the law, and especially because of the decision by Justice Truax. In disposing of these cases the special sessions court has decided that hereafter for a first offense the fine will not exceed $50, which sum will be the minimum fine for a second offense, the maximum being placed at $200. For a third offense it is agreed the defendant will be sent to prison for thirty days.

COMING EVENTS

October 24-31, New York City—Automobile Club of America's eighth annual show in Grand Central Palace.

November 2-9, New York City—Association Licensed Automobile Manufacturers' eighth annual show in Madison Square Garden.

November 9-16, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show at First Regiment Armory.

November 15-16, Newark, N. J.—New Jersey Automobile and Motor Club's 24-hour endurance contest.

November 26, 27, 28, Chicago, Ill.—Chicago Motor Club's three days' 600-mile reliability run.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

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THE PALACE SHOW AND ITS DEVELOPMENTS

It is doubtful if, during late years, a public function opened under more unfavorable conditions than did the eighth annual show of the Automobile Club of America which was inaugurated in Grand Central Palace, New York, on Thursday evening last, 24th inst., and which ends this evening.

With Wall Street and other financial centers sorely distressed, with a dozen banking institutions closing their doors and practically every other bank being subjected to the drains of panicky depositors, and with the germ of public panic in the air—conditions such as these are not calculated to bring smiles to the face of the promoter of any enterprise, and least of all to the promoter of and the participants in an automobile show. A motor car represents more money than the average man is able to lay away in the course of a year or two. Popularly, at least, it is supposed to be the vehicle of the man of means and he was the man most vitally concerned with the financial stress which has just about been relieved.

But for all of that the Palace show opened with a rush and a crush. Opening night always is "paper night," and while the box office usually gives a good account of itself, it is the "complimentaries" that causes the crush. The Palace was jammed to suffocation Thursday evening, but it was plain to see that the bulk of the crowd was not of the sort that is interested in the transactions of stock exchanges or the reports of bank balances. It was largely made up of young people and some not so young, who would be motorists—or autoists, as some wise ones would say—if wishes were but motor cars. They were more intent on collecting souvenirs than in delving into the mysteries of polished chassis. Souvenirs, by the way, were more numerous than at the previous show or two, and while none were ornate or expensive, the women, as usual, scented them out and led the rush for them, and, also as usual, a few of the young men who ordinarily do not wear evening dress when making sales, and who do not often get so far from home, found the souvenir distribution an occasion for becoming what is too politely termed "fresh." The wonder is that some of them do not feel the sharp end of a hatpin or the knuckled side of a fist.

With the froth of the opening night blown away, Friday evening ushered in a crowd that, to tell the whole truth, was disappointing. There was no occasion for any one to elbow his neighbor. Officially it was denominated "Merchants Night" and possibly the average merchant was too much concerned about the safety of his bank account to think of automobile shows. The attendance on Saturday—"City Officials' Night"—was a distinct improvement and about the same attendance has since been the rule. How many of the city officials were present never will be known. It is certain, at any rate, that at least one of them was there, and he did not wait for nightfall to put in an appearance. He was the Fire Commissioner, and immediately following his visit things began to happen.

"No smoking" had been the cry that first met the visitors' ears when they set foot in the lobby of the Palace and in printed form it met their gaze at almost every twist and turn of the many twists and turns within the building. He who gave no heed to the warnings and in defiance of them carried a cigar between his lips or fingers was often tapped on the shoulder and reminded of his offense by the gray uniformed guards who policed the place. But despite these precautions smoking continued, exhibitors being the worst offenders. Within their own little enclosures some of them considered themselves immune, and persisted in puffing, that is, until the Fire Commissioner dropped in. He served notice that if the smoking was not stopped the show would be closed forthwith. The gray garbed guards "got busy" with redoubled energy and at least one of them received a black eye as a reward for his efforts. One of the exhibitors who refused to douse his glim or who objected to the manner in which he was requested to do so handed the darkened optic to the man in gray. For his generosity, he was hurried out of the building and "invited" to stay out. A flat tired newspaper man who "butted" into the proceedings, was likewise ordered out and instructed not to return. The latter, however, sneaked back through a side door and sought refuge in the press room, where later he was discovered by the guards who promptly sought to eject him a second time. He placed himself under the protecting wing of the manager of the press bureau, who played the part of protector so well that the guards retired across the threshold. They lay in wait for their prey, however, and he remained marooned in the room for a considerable length of time. How he finally made his escape is not made clear.

There were others whom the enforcement of the no smoking order seriously inconvenienced. Stories are told of more than one big man in the industry who closed themselves within stuffy coupes or town cars for a surreptitious puff, only to be detected and routed out by the vigilant watchmen.

The visit of the Fire Commissioner brought more than personal inconvenience to a few men, however. It caused the show itself to shed its dressing of autumnal foliage. The foliage had not been fireproofed and perforce, it had to be removed. And truth to tell, it was small loss. "Autumnal woodland setting" sounded good, and it looked well in imagination, but in reality it was painfully suggestive of nothing so much as a collection of common, ordinary, everyday dead leaves, devoid of contrasting colors, which some one had forgotten to remove from a previous exhibition of floriculture or forestry. When the dry leaves were removed the exposure of the gilded balustrades wrought a distinct im-

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provement. Many persons then learned for the first time that the balconies are gilded.

With the foliage gone, there was left only the huge electric emblem of the Automobile Club of America, the red carpeting and the green bunting, which hid the nakedness of posts, pillars and walls. This green bunting was the despair of photographers and if there are few decent general views or pictures of exhibits of motor cars it is due to no fault of the camera operators. They tried hard but snapping dark objects against a dark background usually results in pictures of dark next-to-nothingness. The photographers thanked their lucky stars that there were exhibits of lamps and of other sundries that glistened. The stringent application of the fire regulations which greatly circumscribed the use of flash lights, added to the discomfiture of the picture takers and when on Sunday the doors of the Palace were locked against them, as they were locked against even the exhibitors, their cup of bitterness spilled over.

While the Fire Department may have appeared unnecessarily stern in its enforcement of the regulations, it is not to be railed at for refusing to "take chances." It requires no vivid imagination to picture the horrors of a panic of any sort in a building so full of halls and corners and passages, and steep, narrow stairways. No safeguards can be too great for such a place.

Of the exhibits there are none that "stand out" from their fellows. Uniformity of sign and decoration do not make for anything of the sort. Those cars which have pride of place on the main floor of course have a great advantage, but it is a pretty question if, though they lack the glare of light, the Rainier, Garford and Cleveland exhibits in the "annex" are not the most effective. And they are effective because they occupy generous space and the space is not crowded. Few cars and plenty of room constitute an open secret of impressive display that is too little appreciated. Some fine day some astute exhibitor will create at least a mild sensation and become the center of attraction by staging one car and one car only in the center of a generous space. There was one booth in the main hall that, while it held much of interest, disappointed many by what it failed to hold, i. e., the booth of the Ford Motor Co. The Motor World's exclusive story of the Ford four-cylinder landaulet, touring car and rumble runabout at prices approximating $1,000, $800 and $600, respectively, had caused many to "whet their appetites" for a view and inspection of such sensationally-priced cars, but alas! not one of them was in evidence. The now well known Ford runabout and six-cylinder touring car, which were the startlers of the previous year, were there, but the new comers—well, according to apparently well founded report, they were on very private view at the Ford store further up town. The Ford Motor Co. will not begin making deliveries of the new models until February and they were not anxious to create a premature demand by disclosing them to the general public.

The show was absolutely devoid of sensations, so-called and otherwise. There was not one car that was more talked about than any of the others; not one exhibit that attracted a larger crowd than was attracted to any of the others, souvenir distributing stands excepted. Possibly the crowd might linger longer in front of, say the Colt runabout, but if so, it was because that creation crudely suggested a Vanderbilt cup racer or because some of those who stopped and gazed were curious to discover whether with its massive front and "dinky" seats placed on what may pass as the flooring of the car, it really was designed as a vehicle for pleasure. Of vehicles that excited interest and caused at least passing comment, it is safe to say that none caused more than the big green wire-screened vehicle in the exhibit of Rapid commercial cars. It was lettered "City of New York. Police Department," and despite its boasted cosmopolitanism, New York, in which horse cars still are to be seen, found in a motor propelled police wagon cause for curiosity and chatter of the light and bantering order. The idea or practice of driving prisoners to jail in an automobile still is new—to the average New Yorker.

In the accessory departments, there was room for variety and for some action at least. At the exhibits of ignition appliances, sparks snapped or crackled, and wherever there was a speed indicator, an electric motor served to show it in the act of indicating. But for human action it was necessary to view the several displays of shock absorbing devices. The men who demonstrated them earned their pay and their chief reward was that as they alternately compressed and released a set of springs, the sight or the noise never failed to attract a crowd. The men whose business it was to demonstrate demountable rims also "earned their passage." Of all the accessory exhibitors, the tire people, as usual, made the most of their spaces. Whether from intuition or extensive experience, they long since ceased to make their show exhibits resemble a retail store or a wareroom, and of late years their booths have been more like well appointed private offices or high-grade sample rooms, which is to say that they have become refined, restful and inviting, and, generally speaking, this was true of their displays at the Palace Show.

Motor cars and accessories were not the only things for sale at the show, as was discovered when, with no intent to deceive and in all innocence, a Motor World man wandered into the Carter reservation. He was not neglected. In fact, he did not have time to introduce himself before he was asked to buy a two-motor car without any tiresome preliminaries about the virtues of the vehicle. But this seeming directness and getting to the point soon took on the light of itself being a mere hasty preliminary to a more vital matter, as apparently no importance was attached to the answer. In fact had the visitor been ripe for so sudden a proposal of purchase he would for the moment have lacked opportunity to indicate it, as the salesman hurried to call attention to the fact that it was still possible to buy stock in the company.

"Yes, indeed," said the salesman, more in emphasis of his own declarations than

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CENSUS OF THE SHOW.

Total Exhibitors		**267**
Cars, 67; Motorcycles, 4; Accessories,		**196**

PLEASURE CARS.

Gasolene:		
One cylinder	2	
Two cylinder	23	
Three cylinder	3	
Four cylinder	107	
Six cylinder	23	
Eight cylinder	2	
Total Gasolene Pleasure		**160**
Steam		**3**
Electric		**3**
Total Pleasure		**166**
Limousines	28	
Touring Cars	73	
Runabouts (Ordinary)	13	
Runabouts (Buggy)	8	
Runabouts (Roadster)	44	
Chassis:		
Two cylinder	6	
Three cylinder	1	
Four cylinder	21	
Six cylinder	6	
Total Chassis		**34**
Air-cooled		**16**
Water-cooled		**178**

COMMERCIAL CARS.

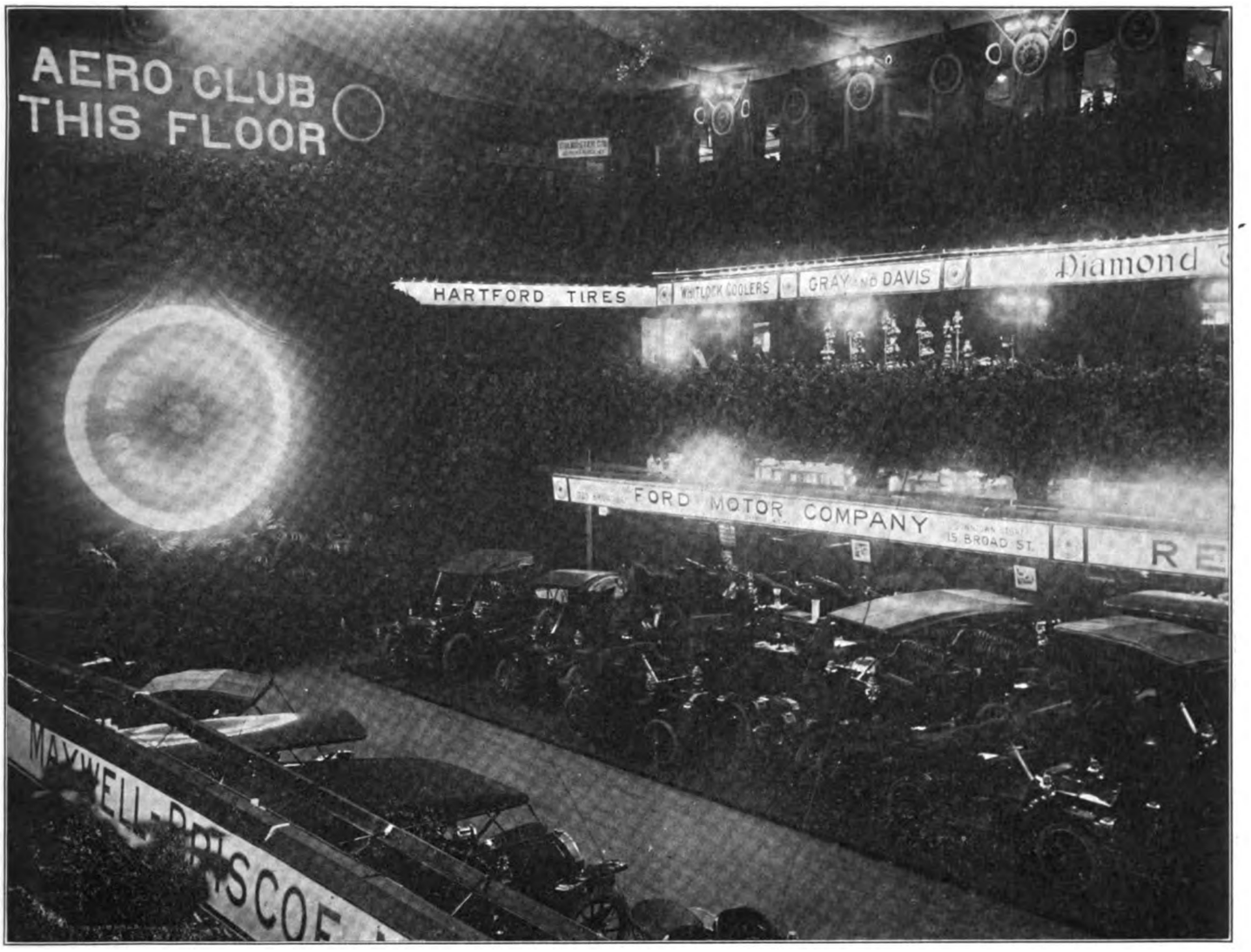
Gasolene:		
One cylinder	1	
Two cylinder	9	
Four cylinder	4	
Total Gasolene		**14**
Electric		**2**
Total Commercial		**16**
Commercial Chassis		**4**

MOTORCYCLES.

One cylinder	6	
Two cylinder	3	
Four cylinder	2	
Eight cylinder	1	
Total Motorcycles		**12**
Total Gasolene Vehicles		**224**
Total Steam Vehicles		**3**
Total Electric Vehicles		**5**
Total all vehicles		**232**

At the Palace show last December, a total of 273 vehicles was exhibited, of which 171 were gasolene pleasure cars, 9 steamers, 6 electrics, 19 motorcycles and 50 chassis. The remainder was made up of 18 commercial vehicles, 15 of which were gasolene and 3 electric.

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NIGHT VIEW FROM ONE OF THE BALCONIES

in confirmation of any expression by the visitor, "you can get stock now for $3 a share that will go up to $5 in a very short time now. After that you can't get a share of it under $5. Not only that, but if you are a stockholder and want to buy a car you can get it at 10 per cent. off the regular price, so you see for even just a small investment you get a chance to save $400 on a $4,000 car, which is pretty good. Then too, there is a mighty good chance of a young man like you being appointed a sales manager if he is one of the early stockholders. Possibly not in New York City, but in one of the big cities of the country, which would be a grand thing with lots of money in it.

"But you wouldn't even have to wait for the factory to be completed," he continued, "because you could start right in selling stock as I'm doing and make a mighty good thing of it. We've just come up from the Jamestown exposition, and the people that saw our proposition there are mighty enthusiastic about it. This will tell you all about how the stock is allotted, and when you've read it over you come back and subscribe."

This last was as the visitor edged away from the stand. He stood outside a moment, surprised to find himself loaded down with booklets and leaflets enough for a winter's reading course. As he was about to go the salesman followed him up, with a pencil and tablet in hand.

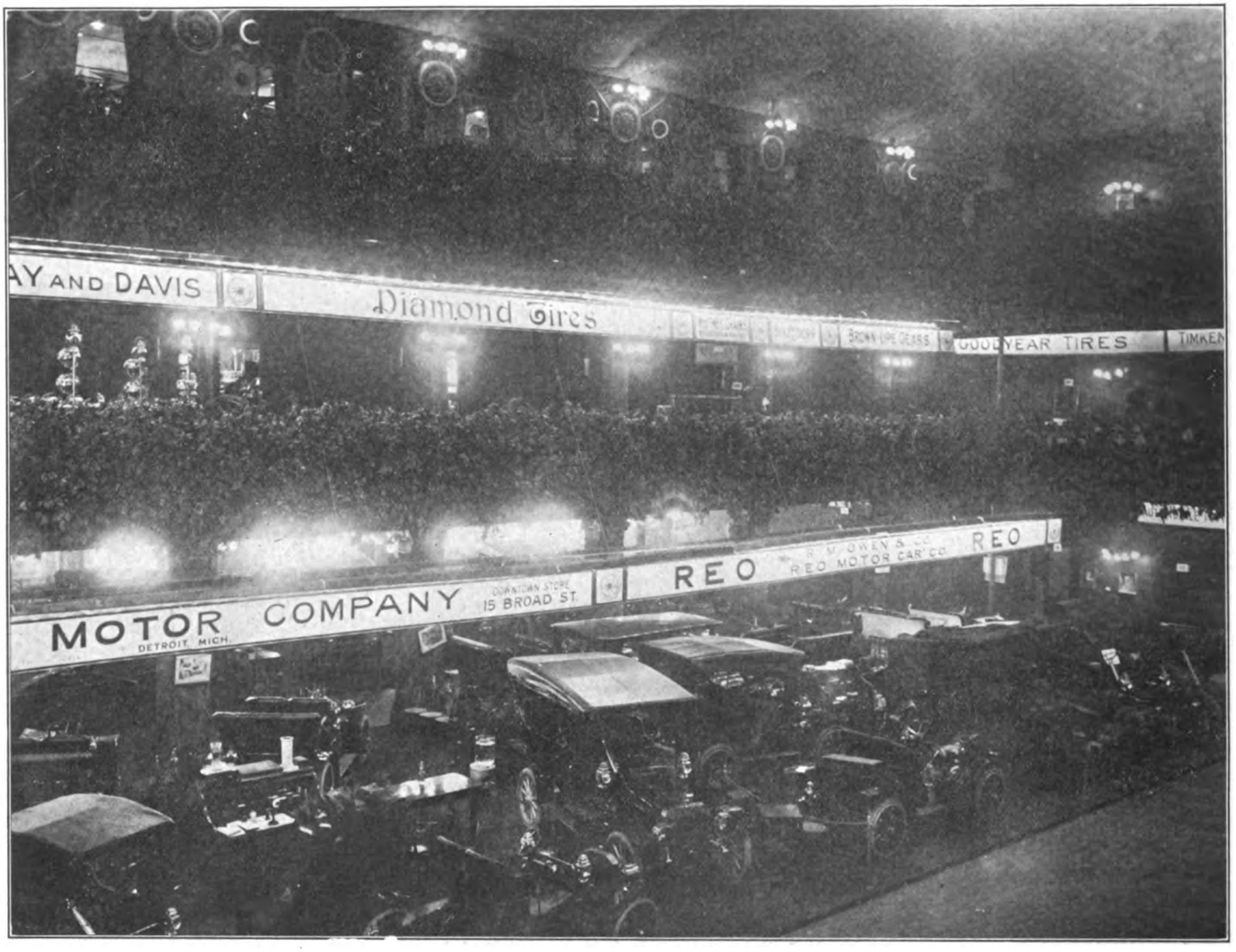
"Give me your name, please," he requested. "You understand, of course," he continued deprecatingly, "that when you come in as a stockholder in our corporation there is a little bit in it for me, and if I have the record of your name why then I'm sure of getting it. You see I want to be sure of my commission just as you would be if you were selling the stock, as I hope you will be before very long, because its a right good thing."

If the salesman's talk was persuasive and convincing, the printed matter that was supplied was not less so. The salesman had said that the price of the stock was $3 a share, and the first of the booklets said the price was $2. The subscription blank gave the price at $2.10 per share, all of which was somewhat confusing, particularly as in later conversation on the subject some one seemed to recall that the price to government clerks in Washington, when the "golden opportunity" was offered to them, was something like $7 a share with a possible advance to $10. So the Motor World man went back again a little later to have it explained. He was also curious to know about the factory in Hyattsville, Md., that the circular told about. Inquiry concerning the latter was put first, another salesman being approached.

"Our factory will consist of nineteen big buildings right near Washington," the second salesman explained with enthusiasm. "It is'nt built yet, but we have a site near Washington and close to Hyattsville, too, and expect to have at least one of the smaller buildings finished before the end of this month. We already have a small assembling plant in Detroit and are very busy building a machine for the Vanderbilt cup race."

When it came to explaining about the various stock quotations, he suggested that the inquirer see the salesman with whom he had originally talked, and turned to convert others of the show crowd who stood

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ANOTHER NIGHT VIEW FROM THE BALCONY

gaping at the curious double motored display. The original salesman could not be found for the moment, so the question of the price of getting a car at a discount and a good job selling stock remained unanswered.

About the Cars Generally.

One thing should be a source of devout and profound gratitude to the motorist, namely that American automobile manufacturers and all who pose in that category have come into a realization of the true worth of well finished bodies, irrespective of type, class or size. In the matter of body work the hand of the carriage maker grows stronger and stronger, and his influence is more readily apparent as time goes on. The result is a grateful relief from some of the productions which have been thrust before the show goer in days gone by. The cunning hand of the carriage maker has molded panels into graceful curves and given them that subtle strength which counts for so much. The same hand has put some of its best work not simply into the dressing of the cars,. but also into the choice of colors and dainty blending of trimmings and lines that until within a year or two were unseen and undreamed of.

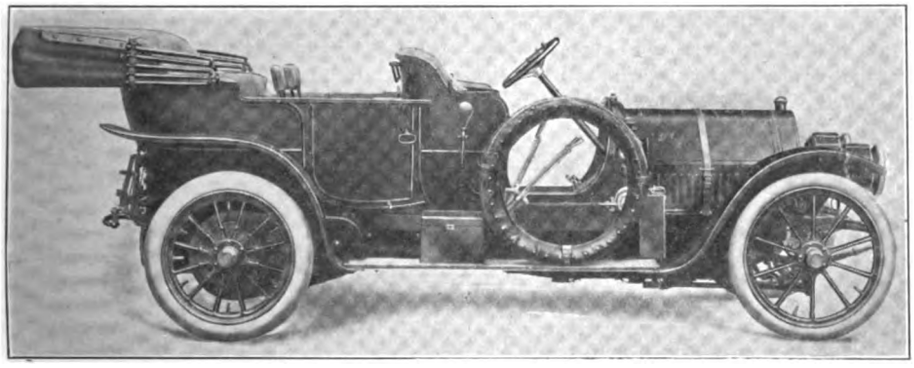
True, on several of the cars exhibited were to be seen varnish runs. Traces of wet paint—the trail of the scramble for the early show—came off on inquisitive fingers applied to the under sides of frame sills and the edges of doors, and occasionally a body would be seen which, because of its roughness, proved a painful eyesore to mar the harmony of the show as a whole. Such instances might almost be counted off on the fingers, however. Most of the cars were well and carefully "done up," and gleamed the fact both far and near. As to the color schemes, they were mostly of the gentle and harmonious sort which pleases without being intrusive. Yet here and there a flaming hue would jar the visitor's system, and one or two combinations were so vibratory as to excite comment. A strong claimant for distinction in this respect was the National runabout, which was gay with red bonnet and seats and green running gear set off with suitable striping, the colorative climax being secured in the painting of the cylindrical fuel tank and its cradle in the rear which wore a clamorous direct-drive plaid of the same decorative elements, set off in gold. The effect was exclamatory —to put it mildly, but as a wilful and intentional violation of all precedent in automobile decoration, it was pardonable, and even laudable as an attempt at improving the scenic effect of the Palace.

Interior trimming and upholstering, like the gloss upon the outside of the cars, appears to improve from show to show. If one or another point of criticism were permissible, they might be based on the grounds that the all-prevalent folding or "jump" seats are almost universally crowded too close to the rear seat, whereby the occupants of the latter cradle have little or no knee room when the tonneau is loaded to its full capacity. Or that these same seats fail to disappear when bid to do so, but obtrude themselves in ugly mechanical bundles at the side or on the floor of the car. Or that in many cases the drivers' seats are even yet practically inaccessible to any but an acrobat or a very thin person of india rubber texture. But these things

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are trivial in the light of what might have been said righteously one time, and had better be let pass.

Styles in body construction appear to be quiescent. Types are converging more and more, and a touring car is a touring car, a runabout not an aspirant for honors in another class, while the closed vehicle has settled down to a condition of apparent usefulness suggestive of theatre parties and shopping junkets rather more than of miniature dwelling places built for the accom



THE NEW PREMIER

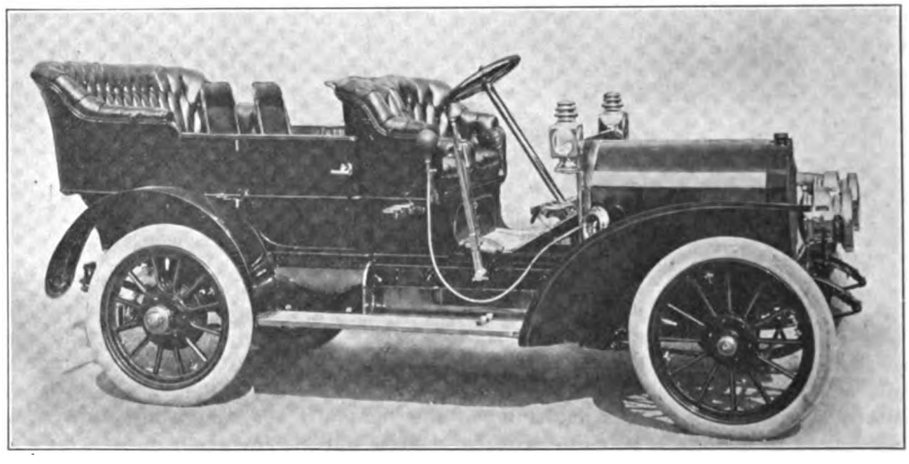
modation of the motorist en panne. The census shows that some 17 per cent, of all cars shown were of the closed type, and a goodly proportion of those answered to the description of the landaulet or cab. This is a new departure and in some respects a welcome one, since the heavy limousine, while useful in many ways, is hardly suited to any but the high-powered car, while its smaller classmate is apt to have either an over or underdone appearance. The advantage of the landaulet, above all other advantages is its convertibility. This element appears in the limousine occasionally as well, however, as in the case of the body shown on the large American Mors car, the sides of which were removable and might be folded up and tucked away in compartments under the roof when the owner wished a semi-open vehicle. The Garford and Stoddard-Dayton landaulets as well as the neat little inside driven coupe of the latter type, were seemingly better suited to the work of the moderate weight and mobile vehicle most in requisition for average use. The daily change of exhibits at the Garford stand, also brought out on Monday an extremely neat and pleasing Victoria with a sort of Central Park air, its body as yet in the wood.

The strong feature of the show, however, counting both numerically and from the standpoint of average interest, was the runabout feature. A full quarter of all vehicles shown were of the roadster runabout pattern. This to say, they were of the full-grown chassis type, fitted with young bodies. Further groups of 8 and 5 per cent., respectively, made up of smaller runabouts and runabouts of the buggy type, added to a total of 40 per cent. of all vehicles, answering to the description of runabout, or handy machine, of one type or another. Formerly, the runabout was a diminutive vehicle capable of seating two passengers and possibly two more—except on hills. The term at present applies merely to type of body and at the show, was found to apply to some rather husky vehicles in which passenger accommodation appeared to be something of an afterthought, and a hasty one at that. The type is a taking one in many respects; it is inclusive; it is American; and furthermore, it lays no stress of tradition upon the designer. Hence, in part, its popularity.

Second only to the general appearance of the machines, perhaps the point which most forcibly struck the visitor at the Palace was the general movement toward the simplification—or apparent simplification—of the control mechanism. Once, designers strove to elaborate the fittings and equipment visible on the dashboard to the highest possible degree. It was bewildering to the novice, and thereby impressed him; it was mechanical-looking, and therefore recommended itself to those who love harmless and amusing complication, or who enjoyed having something to watch; and it glittered, and hence recommended itself to the purposes of the exhibition. The tide has ebbed now, and the race is to see how much can be eliminated or hidden from view.

In many instances there was apparent on investigation, a real simplifying of the controlling devices required for the operation of the vehicle. Thus in the Garford machines, and especially in the case of the little Victoria already mentioned, the long, sloping footboard, rose to about half the height of the dash, which was adorned with nothing more than a single push-button for short-circuiting the magneto. Two pedal plates of the popular broad, push pattern the steering column surmounted with two levers for controlling the motor, and the two usual side levers, completed the visible equipment. Nor was the space under the angle of the footboard and behind the dash a place of concealment. Only the pressure-feed oiler was mounted there, and a small trap in the flooring gave ready access to it. The Model B, chassis, of the same make, had, in addition to the equipment already named, a foot accelerator of the piano pedal type, located between the clutch and brake controllers.

A distinct and remarkable opposite extreme was observable in the case of the new Ellsworth car, which mounted a hollow dash answering to all the requirements of the Pandora's box of narative fiction. It contained in addition to the actuating devices brought down from the steering column, the high tension magneto, coil, timer, and carburetter, all neatly and compactly arranged, and destined to be covered in by a perfectly plain panel board. The effect of simplicity was thus triumphantly consummated without removing the important auxiliaries from the driver's reach. The steering column of this machine also was noteworthy in several ways. The pillar, instead of being tubular and of light or even flimsy construction, such as many of the cheaper machines mounted, was massive, made of steel, and roughly triangular in section. Just below the wheel, and protruding from either side of a rectangular box were a set of four push rods extend-



THE NEW GARFORD

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ing transversely of the machine and ending with finger-pieces placed within easy reaching distance from the rim. In driving, the fingers of one hand might easily reach either of the button tips, to push it toward the column, while those of the other would naturally force it in the opposite direction, if required. In this way the magneto timer, coil timer, throttle, and magneto-coil switch, could be actuated at will, and without the necessity of releasing the grip of the wheel, each bar moving through a detent mechanism which gripped it in successive notches and prevented jarring out of adjustment.

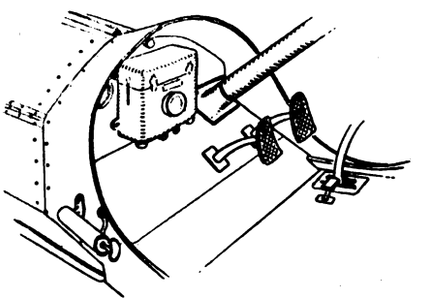
Between these two types, the whole gamut was run from actual to merely apparent simplicity, the result in every case being a uniform simplification of the actual motions required to operate the vehicle, and a very profitable doing away with needless visible mechanism. Pedals, were almost without exception of the push plate type, with large pads, often protected at the sides with flanges to prevent the sole from slipping to one side. This device was found on the Stoddard-Dayton cars and others. The large plates on the Acme pedals were hinged and held in normal position by springs, the intention being to allow them to conform to the natural angle of the foot. Like the Garford chassis, the Rainier and Cleveland accelerators were mounted between the clutch and brake pedals, and were of the piano lever type. A couple of exceptions to the push-pedal rule, were found in the Maxwell and Gaeth machines. The former, as applied to the accelerator of the 26 horsepower car, had both heel and toe plates, arranged to interlock, the pedal being set by direct push, and released by depressing the heel catch. The Gaeth pedal was of the same sort, the clutch being applied and locked in engagement by direct thrust, and contrary to general practice, while its release was accomplished by rocking the foot back upon the heel plate.

An unusually simple system proved to be that of the little Overland runabout, which was controlled by three pedals, two for the change gearing and one for the brakes, while no levers were used except those on the steering wheel, required to handle the motor. The brake and high speed levers were of the push pattern, while the low and reverse controller had a rounded top suitable for engagement by the ball of the foot, and capable of being rocked forward or backward as occasion demanded. The interconnection was such that throwing in one pedal released the others.

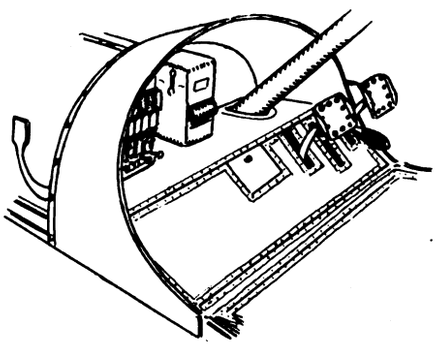
Seemingly there could be little variation in the use and structure of the side levers. Yet a number of interesting variations to common practice were observable, as in the case of the De Luxe gear shifting member, which had a latch for guarding the inadvertent use of the fourth speed as well as the reverse, which commonly is the only one so protected. The Stoddard-Dayton gear levers are mounted inside the chassis frame and well within the confines of the footboard. In the cases of the National, Crawford Model E and Pennsylvania machines, the usual practice of placing the emergency brake lever outside the gear lever was reversed, the emergency being located nearest the steering column and the driver's hand. The selective lever system employed on the little Brush cars was remarkable in so small a car, and also from the fact that the emergency brake was applied by one of the four possible selections. The Atlas runabout was distinguished by a change gear lever which in addition to its regular motion might be swung outwardly to permit of ready access to the seat from the right hand side of the vehicle—a simple device, in principle and effect, which well might be imitated.

Among unusual features in the same connection may be instanced the placing of the coil under the front seat of the new Imperial roadster, to clear the dash of litter; the mounting of the timer in front of the dash of the Moon car, behind glass, set flush; the use of low side doors on the Dragon touring car; the Frontenac dash with its large storage space; and the dash of the Wayne roadster which also afforded some little storage room. Aluminum footboards were observable on the Premier, where only the inclined riser was of this metal, and the American Napier six-cylinder limousine, which had also a thoughtful provision in the shape of plates covering the sills at the ends of the footboard, which were of sheet iron roughed up with rasp teeth, to form a safety tread. One or two other cars also had aluminum floors. Among them was the De Luxe, which was unique,

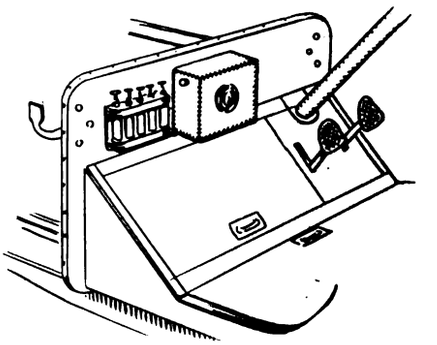
Varied Disposition of Dash Board Equipment.



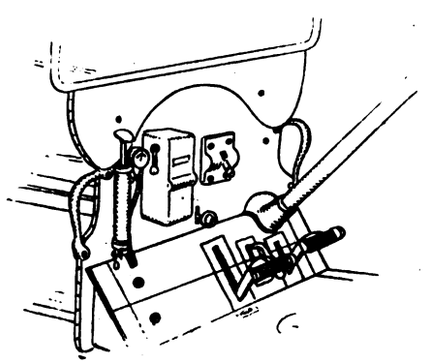
STODDARD-DAYTON



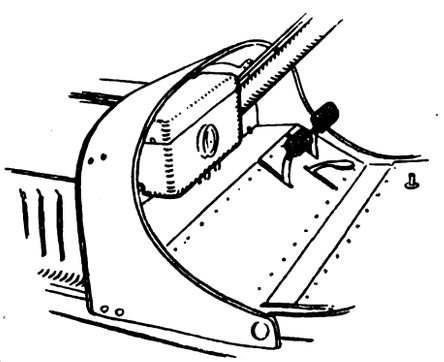
NATIONAL



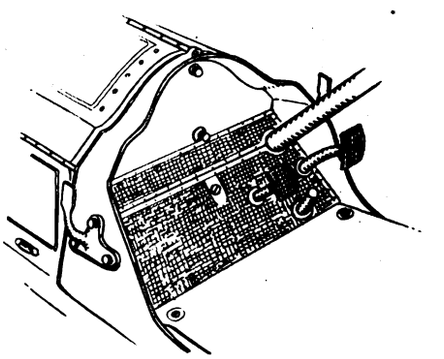
AMERICAN



CONTINENTAL



MITCHELL



GARFORD

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in that the incline mounted a rectangular bronze plate in which were arranged the auxiliary air and oil pumps, with their stop cocks, all nicely labelled and set flush or nearly so, with the board. Brass or bronze trimmings to the foot board appeared in various instances, the Great Smith car having a somewhat unusual provision in the shape of a bronze casting carrying the slots through which the pedals worked, thus protecting them and strengthening the flooring.

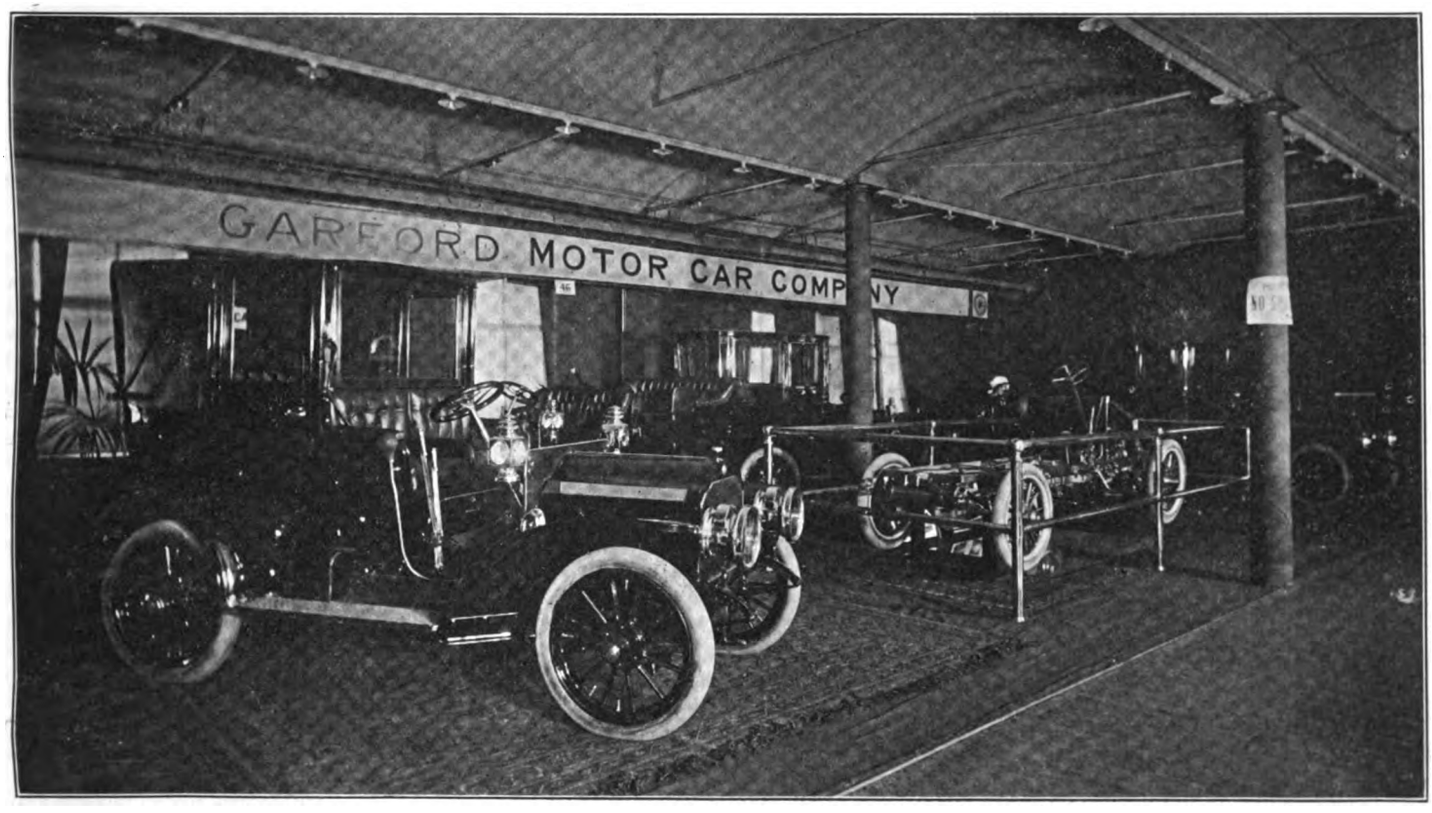
It is several years since the makers, as a rule, gave over the practice of adding the wings and splashboards, or mud guards and fenders, as a sort of final and reluctant finishing touch to automobile beauty, as it was then rated. Almost universally the delineator of the body now has influenced the shaping of the elements to harmonize with the characteristics of the vehicle as a whole. Those inconsequential-looking little flanges turned down around the outer edges of the guards, which began to appear last year for the first time, have proved their worth in checking the out-thrown dust. They are somewhat more in evidence than formerly in consequence—if a general impression may be relied upon—and are variously constructed with either brazed or riveted flanges. The latter method of construction gives a rather novel appearance to the guard because of the rows of rivet heads around its periphery. The National and A-K cars mount this type, among others.

In form the use of the long sloping front guard and rear close one conforming to the shape and size of the wheel, is a combination frequently to be seen. Such cars as the Rainier, Garford, Premier, and Wayne roadster, are so equipped. The Continental, Glide, Pennsylvania, York-Pullman and Cleveland, mount rear guards carried directly backward from the top of the wheel, either ending in a plain tangent or bending up slightly at the very end. The full benefit of the straight tangent guard from the decorative point of view, might be observed to advantage in the new Marmon cars, the guards of which in addition to this point were convexed slightly on the upper side, softening the effect, as well as improving the action of the system on the road. With the big runabout roadsters, naturally the front guards are carried to a lengthy extreme, as instance the conspicuous cases of the Gearless Greyhound, Great Chadwick Six, Frontenac, and other monstrous creations.

A considerable number of the makers use protecting wings between the running boards and the sides of the chassis, thus doing away with all cross draughts when the car is in motion, and very materially increasing its cleanliness. This is true of the Lambert, Marmon, De Luxe, Garford, Maxwell and Austin, among others, while in the Premier, the rear guards only are brought over to the body, and in numerous other instances, only the front guards are brought over. The Reo guards are made full and complete this year. Many other cars, great and small, however, have no such provision.

Running boards, here and there, presented points of "difference" from what might have been expected, as instance the American Napier and De Luxe aluminum plates, and the built-up steel type found on the Dragon touring car and the Moon, in which thin strips of metal, set on edge and riveted together, gave much the same effect as the expanded metal used in structural work, and which must invariably present an even and safe resting place for the foot, as well as having no power of retaining mud or water.

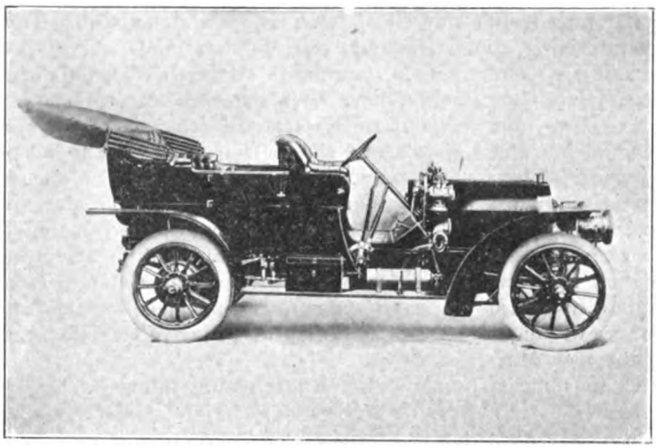
Among the interesting things to be dis-



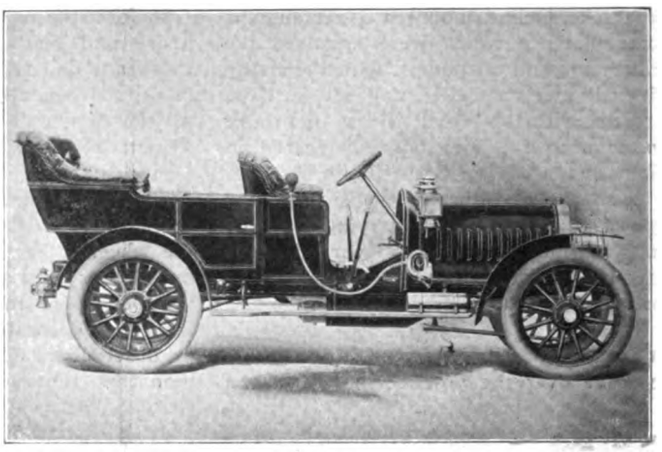
covered in axle construction may be mentioned the equipment of the Brush runabout, both in the single and twin cylinder types, which is of wood, oil-soaked, trussed and braced with metal, and fitted with metal end pieces carrying the wheel journals. Another departure from the ordinary developed in the case of the latest model Crawford car, which has a tubular front axle, reinforced by a solid bar inserted in it. As for metals of construction, the use of steel is, of course, practically exclusive, yet, one or two exceptions are employed, as instance, the Cameron and Acme bronze front axles, representing two widely divergent classes of service. In one case, that of the Great Smith car, the former use of a bronze front axle has been discontinued in favor of steel of similar section.

Little in the way of novelty was to be expected in axle sections, and little was found. The Ellsworth axles appeared ex-

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Pennsylvania.



Rainier.

tremely light, probably owing to the use of the precious automobile metals of which the machine is reputed to be constructed throughout. The Mitchell front axle has a much wider flange at the top than at the bottom, thus giving the effect of a T-section in some degree. The American Mors front axle is of square section at the ends and rounded in the centre. Otherwise, the types used were either of tubular or I-beam section—and in the ratio of about one to three, so far as could be judged.

Rear axles were for the most part of tubular section, owing to the preponderating use of shaft drive. In fact, this pattern of axle was exhibited on about 90 per cent. of all the cars staged. Exceptions to the rule were found in the case of the chain driven cars, such as the Chadwick, Ellsworth, Acme and the ever exceptional Brush. The DeLuxe I-beam, live axle, a well-known feature of the machine, is continued in unaltered form.

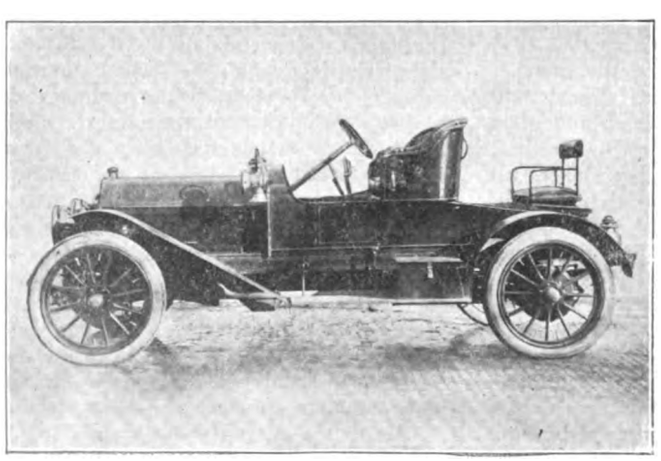
Car weight is a matter of comparatively small importance in itself, so long as every vehicle has sufficient power to propel itself under the average conditions of the country where it is used. More than that, less and less interest appears to be manifested in it by the show goer, from year to year Yet between weights and tire sizes, there is a direct relation which, considering all that is involved, would appear to be of sufficient exactitude and importance to breed some little agreement between cars of corresponding types. That such is not absolutely the case, however, but that instead, considerable variety exists, is a somewhat surprising conclusion. For another thing, the nominal growth of the use of large tires, is not so apparent at this time as might have been expected.

Thus, taking a representative group of the show cars, including the best and most consistently designed machines as well as several of the most successful, 17 were found to be equipped with 34 by 4-inch tires, front and rear, and their weights ranged from 2,100 to 3,000 pounds, in jumps of approximately 100 pounds, nominal rating. Three of them weighed 2,400 pounds, and three groups of two each developed 2,500, 2,800 and 3,000 pounds. The remainder were of increasing powers between these limits, and neither in design, purpose, nor geographical location was discoverable any explanation of the popularity of this one size.

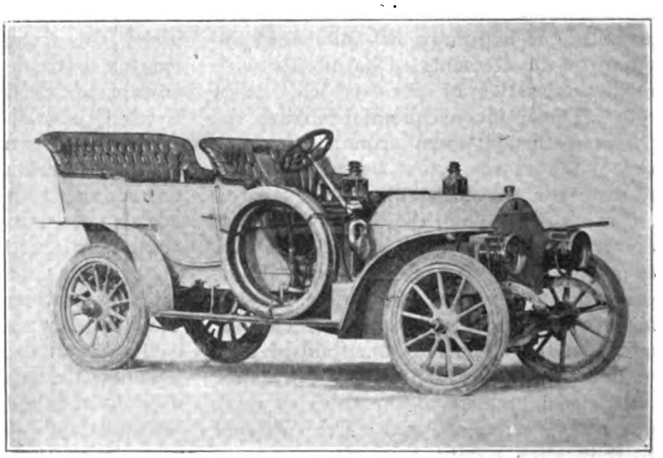
Five others, taken at random from specifications of all cars exhibited, and weighing between 2,000 and 3,000 pounds, were shown with 32 by 3½-inch tires. The fact that they were roadster models, would seem to explain the agreement, were it not for the fact that their weights differed by several hundred pounds in the extreme, and that others of the same class, and weighing no more, were shod with 36-inch tires, either 4 or 4½ inches in diameter.

As a matter of fact it was difficult to find makers who had increased tire size since last year on models still carried without material change. The Reo cars run on 1-inch larger tires than last year, to be sure, but are little different in other respects, which might be supposed to affect the matter. The Jackson touring cars, by way of contrast, were said to have ½-inch smaller tires than last year, and to have their wheel base reduced by 1 inch. Nothing like the almost unanimous acclamation of increased tire sizes such as that of the last Palace show, was heard.

The use of unequal sized tires on front and rear wheels, also showed small development one way or the other. Several rather startling combinations were to be found, however, as on the Chadwick touring car, which was listed with 34 by 4-inch tires in front, and 36 by 5 in the rear, or the American roadster with a 36 by 3½ and 36 by 4 equipment. All told, perhaps a round dozen of the makers of standard cars of the medium type and included within the above weight range, regularly stock different sizes on front and back of car.

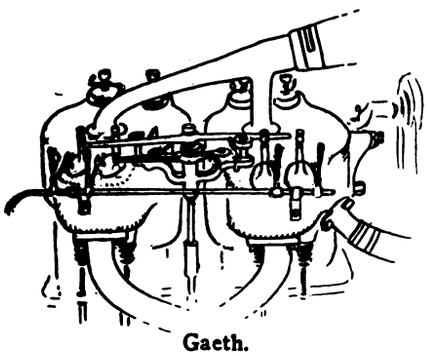


Continental.

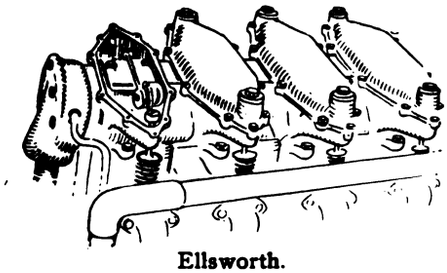


Cleveland.

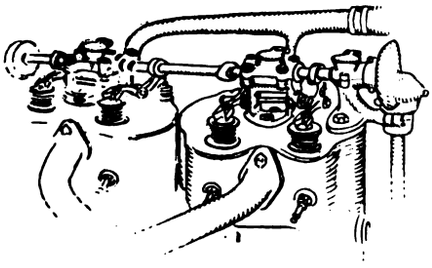
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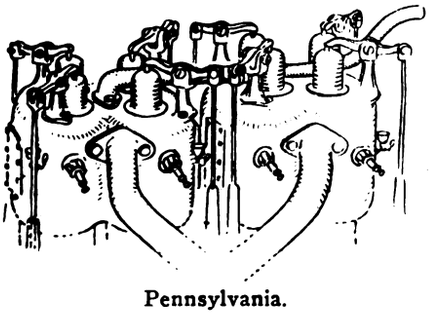
Gaeth.



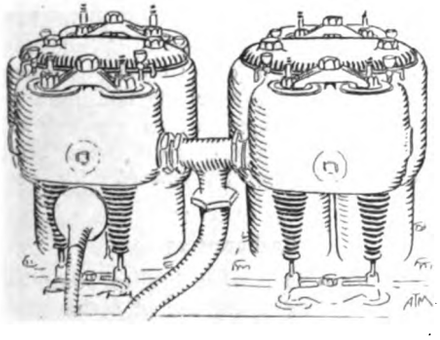
Ellsworth.



Moon.



Pennsylvania.



Water Cooled Marmon.

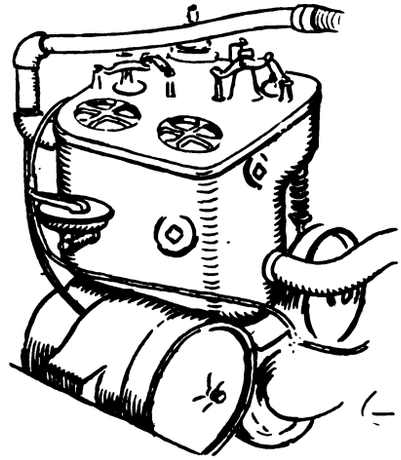
Similarly an attempt to discover any growing fixture of relation between wheel bases and weights, or wheel bases and duty classification proved disappointing. Out of some 40 cars, weighing, as before, 2,000 to 3,000 pounds, a range of 3 feet was found to exist in the wheel bases. Two of these machines with 103 and 136 inch bases, weighed, according to listing, 3,100, and 3,000 pounds, respectively, and other equally eccentric variations were found.

A general increase of wheel and wheel base sizes followed the increasing weight of the car, as a matter of course, yet the relation did not appear to be in either case, the fixed one that might have been expected. Generally speaking, runabout and touring car lines were shown on chassis closely related, if not exactly alike except for alterations in the positions of the radiator and steering gear. Yet the credited weights failed to reveal as much difference as might have been expected, and no general similarity of practice in altering tire sizes or leaving them the same in both types, was noticeable.

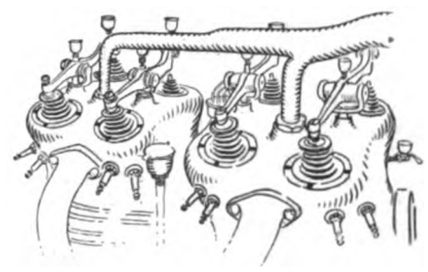
MOTORS.

With a total horse power reaching well into the hundred thousands, ranging from 4 horsepower units in runabouts to 90 in touring cars, the endeavors of manufacturers to increase the reliability of the motor proved an interesting feature to visitors at the Palace.

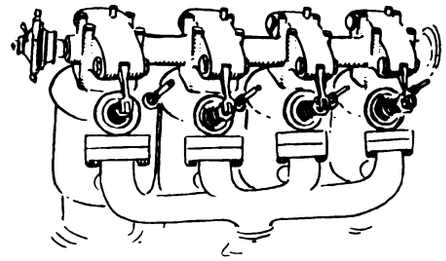
Strict attention appears to have been given to each motor that the best equipment might be procured for ignition, lubrication and carburation, and in no case have these three important features been neglected. While these are the vital auxiliaries of the hydro-carbon motor, in relation to the reliability, other details to accomplish economy and durability also appear to have been given due consideration to a marked degree. The four cylinder vertical motor predominated, of course, but, also, of course, the six cylinder engine shows an increase, there being twenty-three of the latter in evidence exhibited by eighteen manufacturers. Of striking interest among these may be mentioned the new



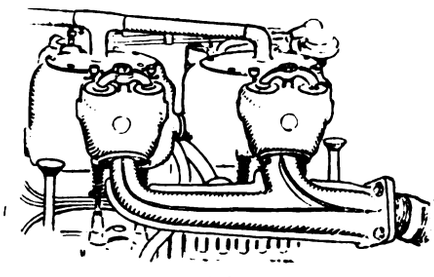
2-Cylinder Brush.



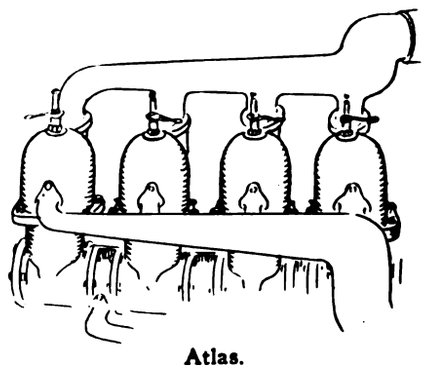
Stoddard-Dayton.



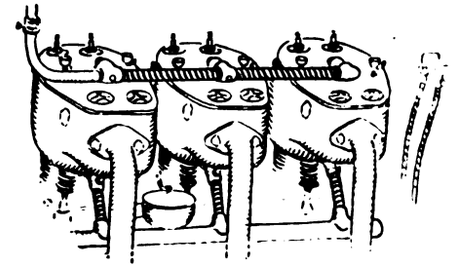
Jackson.



Rainier.



Atlas.



American Mors.

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National "Little Six," a particularly compact machine considering its power; the Stoddard-Dayton and American Mors. Among those which have been seen before, the Ford "6-40" still holds its own as a model of lightness and simplicity. The chief aim in most cases has been simplicity, which, of course leads to less mechanical intricacies, giving an opportunity for the novice to derive the best of satisfaction from his power equipment. In general, no noticeable effort has been made to reduce the weight of the motors, the aim of the designers having been simplicity, accessibility and durability, without sacrifice to cost.

No noticeable radical features were to be found in the array of motors, notwithstanding the fact that quite a number were exhibited for the first time. The number of motors with overhead valve gears, however, such as the new Stoddard-Dayton four, the Pennsylvania, and the Model E Jackson, was sufficiently great to attract attention.

The Marmon air-cooled 90 degree motor, with its new detachable cylinder heads, easily removable without disturbing any of the valve adjustments, was a prominent and characteristic feature. The valves are situated in the heads, the latter being attached to the cylinder by four long stud bolts passing through the cooling flanges to the crank case. The new water-cooled Marmon also proved something of a revelation, the arrangement of its intake piping being absolutely unique. Siamesed intake ports are employed in its twin cylinder units, the gas entering the first and fourth cylinders over the inlet valves of the second and third.

Apart from the interest created in the Brush runabout and its sister car of greater pretentions, as a whole, the motor of this little car deserves special mention as showing what its designer has attempted to accomplish in the way of balancing the crank and piston groups. The single cylinder motor of the smaller car is counter-balanced in the usual way by means of weights set opposite the crank throws. The method of treatment of the twin motor on the larger car, is however, particularly original and novel.

In this machine, both pistons work on the same crank pin, the forces to be opposed thus being exactly double those existing in the single motor. Instead of placing the entire counter-balancing weight in one or two masses opposite the crank throws, however, balance is obtained by what the inventor correctly terms a "foolishly simple device." The weight necessary to oppose the vertical thrusts of the pistons and cranks is divided, one half being mounted in the usual way on the crank webs, and the other being placed on a secondary counter shaft mounted in an independent case at one side of the crank case and a little above the center line. This mass with its shaft, is driven by spiral gears from the crank shaft, and since it turns in the opposite direction from the crank shaft, exactly counteracts all horizontal forces set up by the rotation of the principal weight. At the same time the theoretical effect is to remove the vertical forces as well.

A secondary and radical purpose further appears as the reason for placing the auxiliary counter shaft above the crankshaft as well as at one side. The natural effect of the resistance to the rotation of the crank shaft of this (or any other) motor, which is developed by the load, is to capsize it in the car. The arrangement of the weights is such that in addition to correcting the internal vibrations of the motor a purely external and artificial vibration is developed. The object of this is to counteract by an average amount, the twisting or torque vibrations of the motor as a whole. However radical the method, certainly the result evolved, is an astonishingly smooth running motor, which is a credit to such a revolutionary undertaking.

Lubrication.

The lubricating question has at last become of sufficient seriousness as to be recognized as most essential to the life of the motor. While a poor grade of oil may be somewhat to blame, still, that the lubricating system must positively lubricate the wearing surfaces of a hydro-carbon motor, is becoming more and more apparent by the endeavors made each season toward the perfection of various devices. Placing the motor in the hands of novices has created a demand for positive lubrication under most exacting circumstances, and caused the development of systems of recognized reliability. This has been proved this year more than ever by nearly every motor being equipped with a force feed lubricator, either as a separate accessory or self contained within the motor crank case, as found in the Klink, Great Smith, De Luxe, Ellsworth and Imperial. In the Marmon system of lubrication an automatic gear pump forces the oil from the crank case, through a hollow crank shaft, to the various parts requiring lubrication. Several were equipped with two systems and where the pistons and crank pins of all the motors were not lubricated by force feed, it was accomplished by splash. The American Mors motor was equipped with an original lubricating system of its own, utilizing the lower part of the crank case as a reservoir, pumping the supply through a sight glass on the dash. From the sight glass a tube leads to the side of the motor brackets, entering a copper tube arranged within an outer tube or container, from which the distributing tubes lead to the various bearings. The inner tube referred to has several small holes to emit the oil to the outer tube, the location of which it is claimed, is very essential to equalize the flow of oil therefrom at any angle the motor may assume while on the climb or descent of steep grades or tipped to the side.

Ignition.

Inspection of the motors exhibited brought to light the effects of the great energy expended by the manufacturer to overcome the difficulties experienced with the ignition system. This examination of the various products showed the almost universal predomination of the jump spark, as was a foregone conclusion. Fifteen makes were equipped with double ignition, one with make and break and jump spark, two with make and break alone, the balance utilizing high tension magneto and storage battery with coil, coil with storage battery or dry cell, high tension magneto with dry cell and coil, or high tension magneto only. Several equipments with magneto consisted of a single coil and distributor, the make and break, of course, utilized a low tension magneto. Among the cars mounting the high tension magneto as a stock feature may be cited the Frayer-Miller (Model C), Glide and Mors. Low tension make and break systems were applied to the Rainier, Garford and American Mors. The National, Cleveland and Stoddard-Dayton (8-G) cars were among those fitted with double ignition. The adoption of the magneto is worthy of note, and so common is considered the demand that arrangements are made for its introduction on cars not regularly so equipped, but in no case was the addition of the high tension magneto a gratis opeion. Storage batteries and dry cells were optional in most cases. Commutators or timers were generally found to be of the ball contact or revolving roller type.

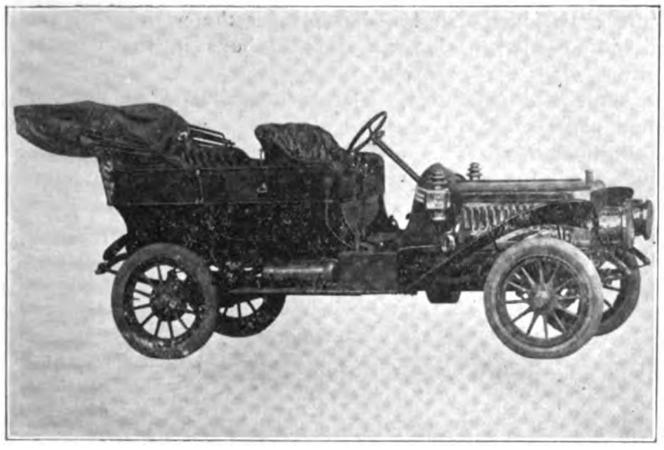
Bearings.

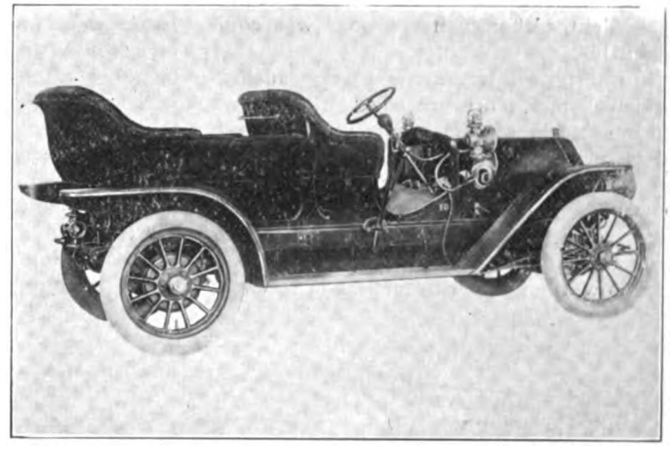
While ball bearing motors, as they are called, are equipped with ball bearings for the crank shaft and cam shaft bearings, it is very interesting to note that no engineer had the temerity to place ball bearings on the crank pin. Several firms, such as the makers of the National, De Luxe and Mora, for example, exhibited ball bearing crank shafts, and one concern equipped the first bearing with balls, the rest with anti-friction metal. The general practice as observed, embodied bronze in the motor bearings throughout, either white, phosphor, or other alloys, and a few manufacturers still adhere to plain babbitt, which speaks for itself. While several claims were made that no changes were apparent the stress invariably laid upon the length of bearings tended to convince the observer that longer bearings were being made or had been anticipated for next season.

Carburetters.

Another problem that has to some extent been settled is the use of carburetters made by the motor car manufacturers

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themselves. There now are so many standard makes of carburetters, made by carburetter specialists and so many of them were in use on the cars at the show that it pointedly suggested that the automobile manufacturers have decided to leave the carburetter design and manufacture alone. Several individual makes of carburetter were shown, however, among them types of both single and multiple jet, also several equipped with hand regulation of needle valve or auxiliary air from the dash. The demand, however, appears for the type with the jet located in the center of the float reservoir.

A constant level carburetter was found on the Brush motor which resembles the type used in the stationary gasolene motor field. A small diaphragm pump forces the fuel from the tank to a constant level reservoir, the level of which is governed by an overflow return to the tank, the height of the overflow corresponding with the top of the nozzle in the induction tube. Other cars shown with original carburetters included the Maxwell, Acme, Gaeth, American Napier, Chadwick, and the new Fay-Ellsworth product.

Minor Details.

Practice places the throttle and spark levers on the steering column; in only a few instances is the throttle interlocked with the clutch mechanism. The use of the pedal accelerator appears to be growing, however. As the years progress, details of a small nature can be discerned, as being adopted by different makers. Fibre washers and plugs are being used to a considerable extent to silence the clatter of the valve mechanism. Manifolds, especially those of the inlet, are receiving more attention. A most compact "equal path" inlet manifold was to be found on the Gearless six-cylinder motor. A similar arrangement in a general way, but with more liberal areas and less abrupt bends, appeared on the new National sextuple engine. The new four-cylinder model of the same mark, has a perfectly straight distributing chamber. In the Garford engine, the two cylinder groups are fed from opposite sides of the mixing chamber through liberal pipes with long, sweeping bends. Oddly enough, in the Chadwick Six, however, no such provision is found, the gas being inducted through spherical chambers at the cylinder groups, but in such a way that while the second and third cylinders get a direct draught upon the carburetter—which is centrally placed—the two end groups must draw their gas more than twice as far. A restriction in the area of the branch to the middle group, probably is intended to counteract the tendency to unequal distribution. The aim in general is to give length, so that the gas has an equal amount of friction and the same number of turns to make, to reach each cylinder. Very few motors contained any offset, and the valve locations were about equally distributed on the sides, though the growing use of valve-in-the-head constructions, provided an interesting variety.

The tendency seems to be to cast the cylinders in pairs as a majority were so constructed. It was an exception to find the equipment without a pump, very few using the thermo-syphon system. Such as the Atlas 2-cycle, and the Maxwell and Gaeth systems, however, proved remarkable and convincing exceptions to the rule. It might be said, as a whole, cams were pinned and keyed on the cam shaft, one instance wherein in addition to both methods cams were brazed, one instance where cam and shaft were forged in one piece, and two cases where they were cut from steel and case hardened, proving exceptional.

Two 2-cycle engines were to be found. They were the products of the Atlas Motor Car Co., and the Reliance Motor Car Co., the former a runabout, the latter a truck. In design the Atlas differs from any 2-cycle engine in use. The exhaust ports extend all around the cylinder, the crank case charge entering the cylinder through the center of the piston from ports in the piston wall corresponding with cylinder wall ports below the exhaust ports.

Apparently the wholesome influence of the horsepower controversy which has been raging so brickly for several years, is at length beginning to be felt. This is noticeable in the use of single and double ratings, as well as in the conservatism observable in many instances. For instance, out of a rough count of half a hundred representative makers exhibiting, full 50 per cent, rated their motors in a single term. A scant 20 per cent. employed both single and double ratings on different models which they produce, while only 30 per cent. of the entire number had recourse to the misleading hyphenated expression.

FRAME CONSTRUCTION.

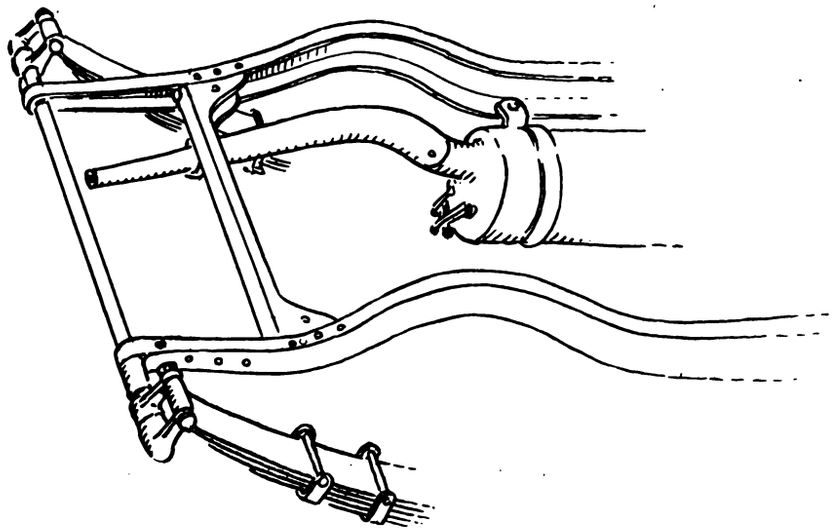
Pressed steel frames may be the order of the day, but the fact remains patent that many frames are in use which are not pressed steel—plain rolled channel steel or angle iron being frequently mistaken for the more expensive article by the uninitiated, in which understanding, he is sometimes encouraged, it is to be feared. A remarkable fact in this connection, is the use of the reinforced or trussed wood frame by several makers, such as Grout, Brush, Cameron, and Smith. Their staunch allegiance to the type, introduces some little question as to whether or not its abandonment by many of the makers in years passed, was well advised, all things considered.

However that may be, the majoroity at present adhere to the so-called pressed steel frame—some of them developing strikingly beautiful designs, as for example the Stoddard-Dayton, Cleveland, and De Luxe frames, the latter of which is of inverted U pattern with reinforced thickness at the open edges. The other two are arched above the rear axle, in order to obtain proper clearance for spring action without disturbing the plain surface of the chassis itself. Of course the same motive develops the dropped frame constructions of the Rainier, Garford, and others, not to omit the "double drop" scheme applied to the new Imperial. The use of a 3½-inch drop both in the front and rear ends of the chassis in this instance was cause for not a little comment at the show, though the absolute necessity of the design was not perfect-

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ly evident, although its purpose was commendable.

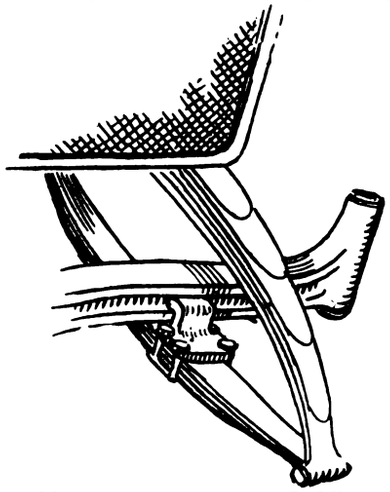
Formerly, sub-frames were very much in evidence, and more recently they have seeemed to be growing more and more out of favor. The use of the gearset mounted on the rear axle, the planetary, the unit power plant complete, and various other devices, have served to undermine its former strong position. Nevertheless, at the present show, the number of makers of standard types of car employing the sub-frame, and the number avoiding its use as studiously, appeared to about the same.



Stoddard-Dayton Rear Frame Arch.

Spring Suspension.

Generalizing on the matter of spring construction, it was observed that while something like 80 per cent. of the cars mounted semi-elliptical springs in front, only about 30 per cent, had a similar equipment in the rear. This was counted for by the evident fact of the growth of the three-quarter platform type, on certain cars, as well as by the continued use of the full elliptic pattern of rear suspension on others. The relative proportions stood at about 12 and 15 per cent., respectively. Full elliptic springs in front, were found on a round half dozen cars, while two, the Cameron and Elsworth, mounted three-quarter elliptics.



Marmon Understrung Saddle.

A noteworthy point in the suspension of the new water cooled Marmon car, which, like its predecessors, has full elliptic springs, is the hanging of the lower side of the front members below, instead of above, the axle. To this end a special form of suspension is used, taking the form of a couple of grab hooks, which grasp the lower flange of the I-beam axle. The effect is to lower the forward part of the frame several inches, and is required by the double three-point system employed.

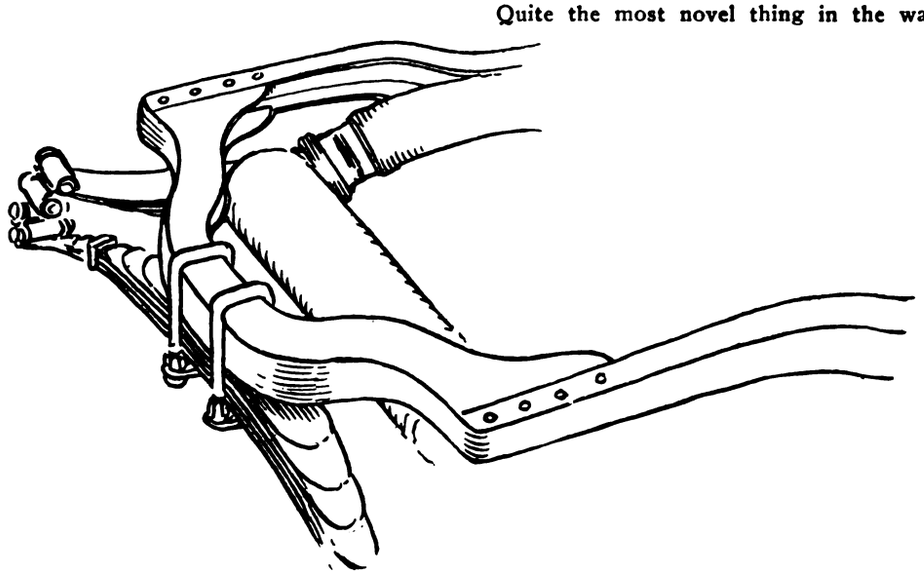
On the National runabout was seen a device for preventing the weaving of the frame over the rear three-quarter platform suspension, which was termed a "parallel bar," and which took the form of a guide mounted on the chassis and engaging a thin block shod with camel's hair fabric, which was attached to the lower spring member near the axle. The device, though readily mistaken for a shock absorber, was said to be designed solely for the purpose of guiding the spring oscillations in the vertical direction.

The Ellsworth springs were distinguishable from the fact that instead of the usual articulation at the jointure of the upper and lower members of the three-quarter and full elliptical elements, the ends were drawn out flat and secured by passing through them a single rivet. The leaves, instead of being kept in alignment by "kitten ears" such as were found on many suspensions, were ridged through the center on one side, and grooved on the other, all the leaves thus fitting together compactly yet without any possibility of disalignment. The same scheme was also applied to one or two other systems.



Lansden Spring Suspension.

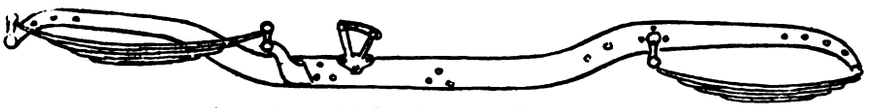
Quite the most novel thing in the way of springs, was the original system employed in suspending the Lansden electric touring car, which was bolstered at each corner of the frame upon a set of four helical springs, mounted on a broad seat on the axle. A close rival to this in point of novelty, was the method of hanging the Brush runabouts. This consisted in the use of four helical springs, mounted over the corners of the frame, and affixed to vertical rods which ran down through them to the axles below, thus giving a free suspension, at the same time providing a stop to violent plungings by the presence of the axles



Extended Rear End of Rainier Frame.

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against which the frame would bring up on such occasions. The use of radius rods which also combined the functions of shock absorbers of the friction joint variety, also was distinctive, and exclusive, although several makers regularly equipped their machines with absorbing devices of one sort or another, one or two, like the Austin, producing their own.



Imperial Double-drop Frame.

The full platform suspension of the new Mora six-cylinder cars proved to be exclusive, also. The two cross members were clamped to the frame cross suspension members in the longitudinal center of the vehicle, while the side springs, of course, were mounted on the axles. The result was a cradle in effect, which was said to ride very easily.

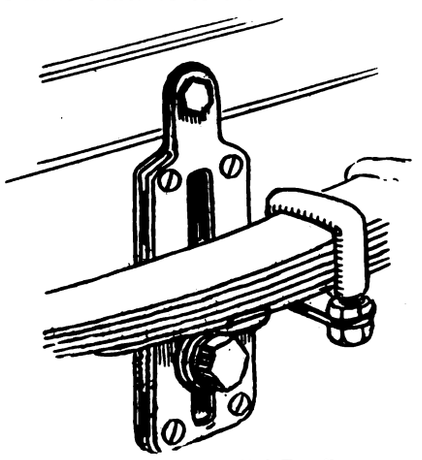
Variety in Clutches.

Plainly the multiple disc type of clutch is growing in favor among the makers. The diversity of its application, however, as well as the fact that there seems to be no settled limit either as to the number of discs to be employed, nor of the metals themselves, resulted in an almost bewildering variety of devices of this nature. Thus while the Premier cars are driven through a clutch having 53 discs, all of steel, and the Cleveland, through one having 50 discs, the Austin cars have a 40-disc clutch (mounting 10 more discs than last year), the Glide, one of 12 discs, 12 inches in diameter, and the Great Smith, one of 23, bronze and steel discs.

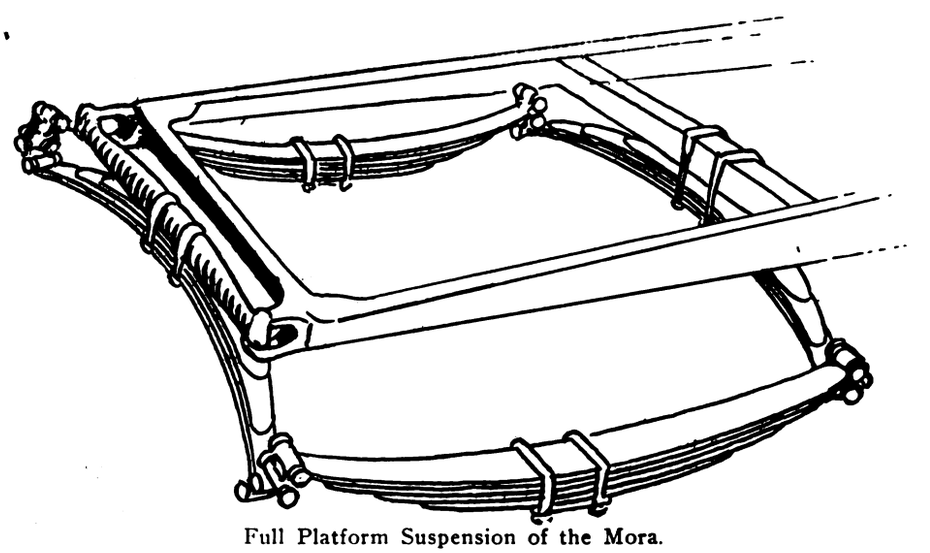
The ring type of clutch, in distinction from the true multiple disc variety which usually has a greater number of elements of smaller diameter, begins to become a factor in the show. Thus the Continental, with 5 rings, Jackson with 6, and Imperial with 3, one of steel and two of bronze, the latter being fitted with cork inserts, are worthy of study. Incidentally, the use of cork inserts is practically universal with this type, and it also is growing sporadically among others as well. Thus the De Luxe clutch is of the plain cone type, the male member being of bronze fitted with inserts, the female member being the regular metal of the flywheel. The cone clutch of the Mora racytype is leather faced in traditional fashion, but also is provided with cork inserts, which replace the more common springs set under the leather.

In a general way it way be said that about 40 per cent. of all clutches seen at the show were of the multiple disc type; some 35 per cent. or more were of the cone type, either plane or inverted; 10 per cent. answered to the description of the ring type, and the remainder were scattered among the several radical devices. Among these, the Wayne internal expanding type, contrasted with the Gaeth contracting clutch, already mentioned in connection with the actuating devices. The metal to metal cone device of the York-Pullman cars, in which cork inserts were used, and the radical coned clutch of the coiled band type used on the Ellsworth car, as well as other occasional departures from the ordinary furnished plenty of variety for one who was willing to seek it out.

The majority of designers still place the clutch in the flywheel and connect it to the drive shaft of the change gear system, either by direct shaft or through one or two universal joints. Two possible variations present themselves forcibly, however, one is the arrangement required when the change speed gearing is mounted on the rear axle, when the drive shaft and usually the torsion tube as well, is transferred from the back to the front of the gear box, thus bringing a new sort of strain upon the clutch itself, unless the tendency to racking is successfully counteracted by the manner of supporting the forward universal joint. A typical illustration of the way in which this system may be worked out, appeared in the new Pennsylvania Model C, while further possible developments along the same line were to be found on the Glide, Frayer-Miller, and Dragon roadsters. The second possible variation in the placing and use of the clutch is to enclose it in the gear case, or in a separate compartment of the same casting, thus eliminating the necessity of interposing a flexible connection between these two elements. The remarkably neat design of the Maxwell power plant in which this feature is embodied, shows what may be done along this line, while of the several other systems carrying along the scheme, the Crawford and Welch —the latter with its two independent disc clutches, and the Smith, with its single lever control system, are interesting examples of the wide variety possible.



National "Parallel Bar."



Full Platform Suspension of the Mora.

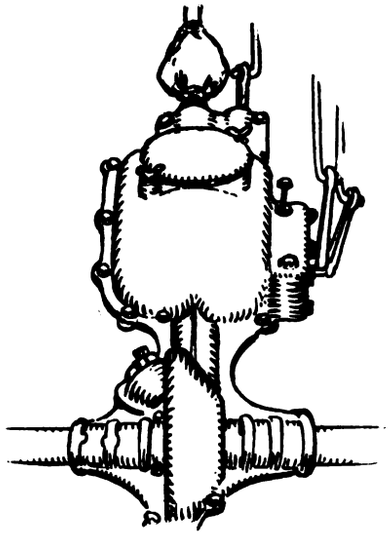
Change Speed Gearing.

Coming to the two principal groups of planetary and sliding gear speed modifying devices, there is room for unlimited variety, not a little interest centering about the relative importance of the two from year to year. While the continuous growth into favor of the sliding gear type of transmission in its various forms is very marked, the planetary group still finds well deserved favor with a few makers. Notable among these are the builders of the Atlas cars, who this year have brought out a planetary gear of their own design which is entirely of the spur type and has no internal annular gears. This device also mounts a very neat multiple disc clutch of the single metal variety. The planetary gear of the Brush runabouts is unique in several ways, the noteworthy feature being the use of but a single set of pinions which are counterbalanced in the case to prevent vibration. Another remarkable point about

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this device is its lubricating system, which is of the force-feed order, circulation being induced by the effect of centrifugal force, and centrifugal force alone. The friction contact planetary system of the Gearless cars, also excited no little comment.

There were shown approximately four times as many sliding gear devices as planetary, however, and hence the bulk of interest centered about them. For the most part they were of the three speed direct-on-high pattern, a fair majority of those applied to the medium powered machines being either of the vertical or inverted vertical pattern such as those of the National, American Mors, Dorris, Mora, and the brand new Colt runabout. A decided advancement in the use of the selective method of actuating the gears, was brought out

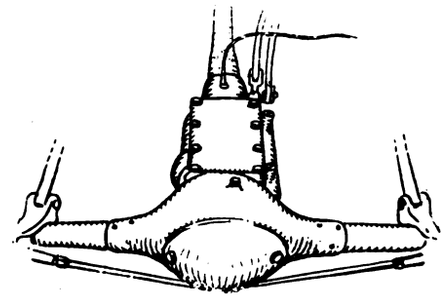


Overland Planetary Gear.

in this connection, the ratio between the progressive and selective types being probably as high as nine to one when the new models alone were considered, but counting the entire range of pleasure vehicles on display, the ratio was reduced to something like four to one. The point is interesting, however, as showing an unmistakable growth on the part of the selectively actuated gear. The use of the friction drive on the Lambert and Carter cars was for the first time supplemented by the appearance of the same sort of transmission on machines of the buggy type.

Although several makers had improved their transmissions to some extent by using ball or roller bearings instead of the plain bushings of last year, and though ball bearing change gears were numerous, nothing appeared to indicate a strong increase in the use of anti-friction bearings for this purpose. The several gearsets mounted on the rear axles, however, such as the Pennsylvania, Glide, Frayer-Miller, Dragon roadster, Wayne and Cameron—the latter mounting a peculiarly simple and effective system of original design—were, with perhaps a single exception, mounted in anti-friction bearings.

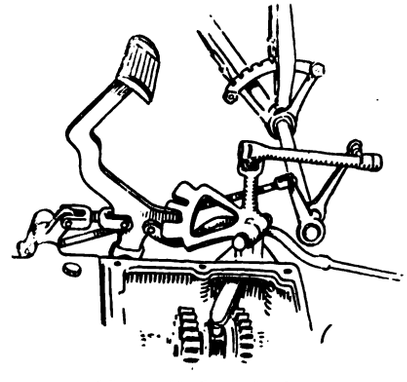
Counting the new models of medium and high power only, it became apparent that fully nine times as many cars were driven by cardan shaft systems, as were driven by



Pennsylvania Rear Axle.

chain or chains. Yet taking the show around, including models of all sorts, this proportion was reduced to something like four to one. The result in either case, merely confirms the impression gained by even the casual on-looker, that this was above all else a show of shaft drives.

This conclusion naturally developed a very interesting field for study in the mounting and general design of the live axles. Here the usual variety was discoverable, the evidently popular method of mounting the axle in the chassis being that known as the "spring drive," in which the rear springs are shackled only at one end and take all the traction load due to the driving effort through the ends which are pivoted directly to brackets or frame sills. With this system, the torsion bar or bars may be shackled to the chassis with absolute freedom of motion, except in the plane at right angles to the axle. With the older system of double shackling the springs, naturally radius and distance rods must be used. The



Maxwell Interlocker.

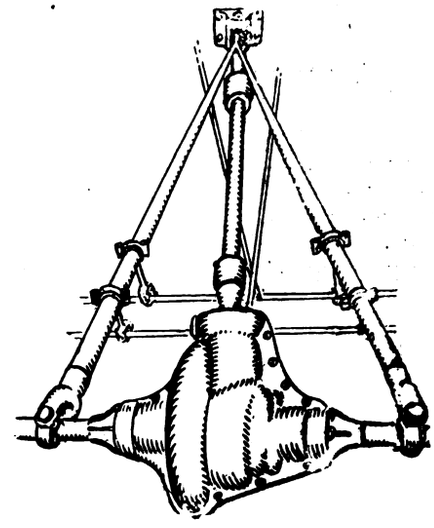
use of torsion tubes, housing the driving shaft and also preserving its alignment, was found to be quite extensive.

The Moon rear axle group in which the two torsion bars were brought together and joined in a universal suspension above the driving shaft, was quite an unusual arrangement; while the simplicity of the Dorris system, in which the spring drive principle was applied to a three-quarter platform suspension, was sufficiently marked to draw attention directly to the arrangement. The extremely simple spring drive system of the Wayne, also was creditable.

Chain drives, both single and double, have been in use for so long as to be ameanable to litttle or no variation from the well tried plan of radius rod drive, which is universally employed. Oddly enough, the chain system appears to be confined largely to machines of both high and low extremes of power and weight, cars in the middle range being for the most part shaft driven.

Improved Brakes.

A general movement, set on foot during the past summer, has developed a degree of attention to the braking problem which is as commendable as it was requisite. Gen-



Moon Torsion Group.

erally speaking, the braking areas have not been increased to a remarkable extent, so far as could be learned from the average stand attendant, but the provisions for application of the brakes, have been re-designed in so many cases as to excite considerable interest.

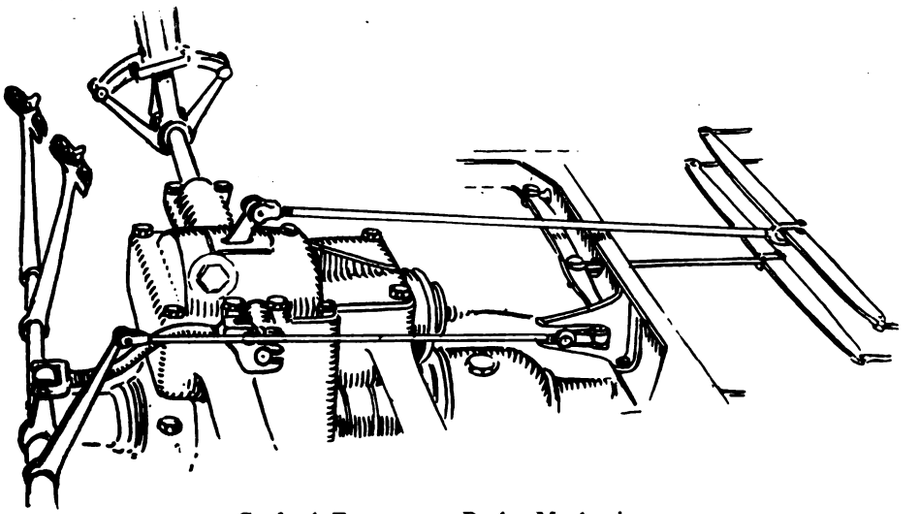
In the Garford chassis, for example, instead of a mass of rigging leading from the side lever around to the rear wheel brake levers, the telescoping shaft upon which the gear changing rock shaft rides, is continued through the upper part of the gear case, which contains the selective mechanism, where it is surmounted by a short rocker arm, playing in a slot in the top of that portion of the case. A straight rod leading from that point back along the center line of the car, is attached to a flat horizontal equalizing bar extending clear across the frame and working in suitable slots in the side members. From its extremities, the brake links are led in a straight line to the brakes themselves.

Several cars now mount the compensating brake beam extending across the frame, among them being the Moon—in which the beams for both brakes are under-hung from

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the torsion member—the Dragon, and Marmon cars. The Maxwell line, is uniformly supplied with cable equalizing devices running over little sheaves mounted substantially on the frame. The same device was found on the Ellsworth car, which has four independent brakes, two on the rear wheels, and two on the countershaft—the latter being readily adjustable from the side of the car and without the use of a wrench. Cable equalizing systems also are employed on the Continental, York-Pullman and others.

The short equalizing beam found on so many of the cars was in the case of the Dor-



Garford Emergency Brake Mechanism.

ris, removed from its usual horizontal position within the frame to a vertical one at the right side, where it is readily accessible for inspection or lubrication. The service brake in this car is mounted just back of the gear case, and takes hold of a drum over the drive shaft. In most of the cars, however, the external-internal pattern of rear wheel brake was employed. In some cases, extraordinary precautions were taken to improve the brakes to the highest possible degree. A noteworthy example of the care outlayed in this respect, was the internal expanding brake employed on the Premier cars for the coming year. This consists of a massive bronze ring, made of a solid piece, and having a series of cork inserts sunk in its working face.

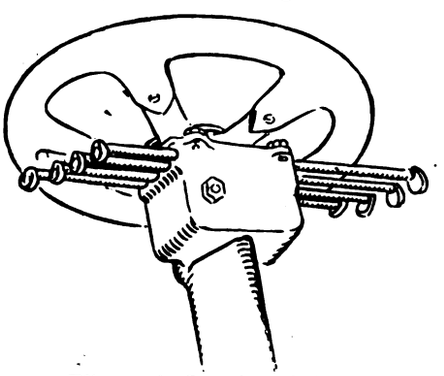
The cone clutch type of brake employed on the Great Smith cars last year again appears, but in reversed position and enlarged form, the result being greater power of retardation, and a safer method of application since the entire mechanism now acts in tension. It may be said that the spirit which prompted this alteration is apparent everywhere, the tendency being to make the braking mechanisms more mechanical than they ever have been before.

Steering Devices.

The Ellsworth steering connections mount a special feature in the shape of extensions to the rocker and knuckle arms, which terminate in flat buttons something like an inch in diameter outside the connecting links, and are intended, it would appear, to prevent those members from dropping entirely in the event of a broken ball and socket joint. Like a number of other parts of this car, they appear to be extremely light.

This arrangement, together with the worm and bevel combination gear employed on the Frontenac car, the somewhat similar gear and rack and pinion device of the Crawford machine, and the plain rack and pinion which continues to be used on the Dorris cars, and which is innocent of any checking or irreversible properties, constituted the chief points of interest in the way of steering gears. The designer, however, probably would be interested in following the layout of the gears, and noting the apparent growth of the custom of placing the drag link behind instead of in front of the axle.

As a matter of fact, some 45 per cent, of the cars shown at the Palace, were equipped in this way, the connecting rod from the



Ellsworth Steering Column.

rocker arm to the knuckle being passed under that member in the majority of cases. A round half dozen of cars, and among them the Dorris, Mitchell and Wayne, had their connections on the left side of the car. The result in each case was that the steering gear itself came well forward in the chassis and permitted the steering column to be given an extremely long rake. Some 5 or 6 machines, had connecting rods led over instead of under the axle, as was the case with the majority, and in order to accomplish this end, a considerable offset in the steering arm was frequently necessary.

The Electric Vehicles.

Mention has already been made of the spring mounting of the Lansden electric touring car. This machine, which, but for its springs, has the aspect of a full-fledged gasolene touring car, is a rather graceful, even if massive vehicle, having a trussed wood frame, under-hung battery equipment, double side chain drive and single motor. Its wheel base is 126 inches, and it is equipped with solid rubber tires. Outfitted with the Edison battery, it is rated for speeds up to 30 miles an hour, and has a nominal mileage of 100 miles on one charge, taken at a speed of 20 miles per hour, average. Two other electric vehicles were also shown on the Lansden stand. One, a typical covered express wagon of sturdy proportions, and the other a florist's delivery vehicle, panelled in gold leaf and painted all in white. Both the commercial types are equipped with the Edison battery and single motor equipment.

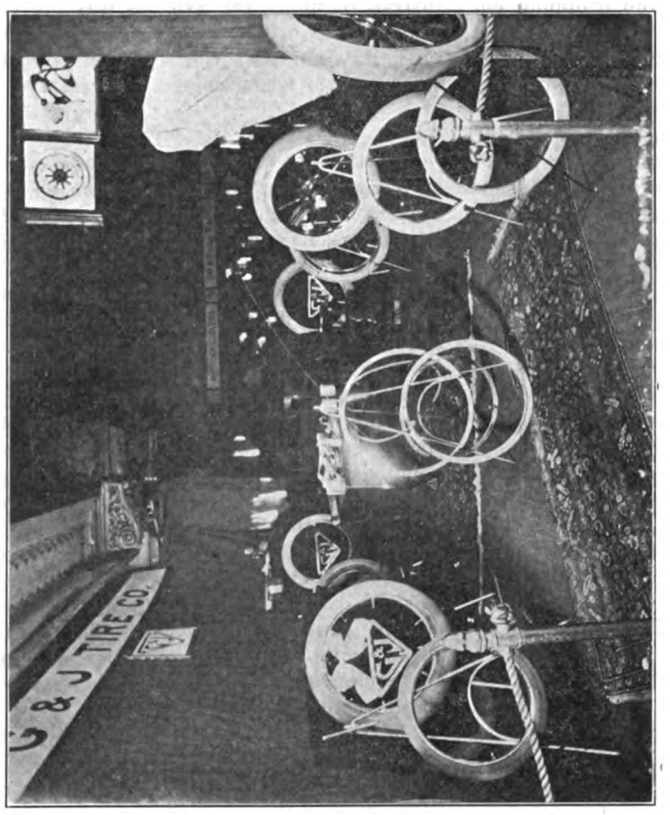
The only other exhibit of electric vehicles was that of the Anderson Carriage Co., makers of the Detroit Electric. This proved to be a neat little vehicle of the medium sized runabout order, and revealing these features: Pressed steel frame, semi-elliptic and full elliptic springs, front and rear, the latter having scrole ends; double chain drive; tubular axles; leather chain and mud guards; and a single motor fully housed. It is made to run on a 24-cell battery, and is guaranteed for 100 miles per charge. It was displayed with both victoria and inside driven coupe bodies.

The Motor Buggies.

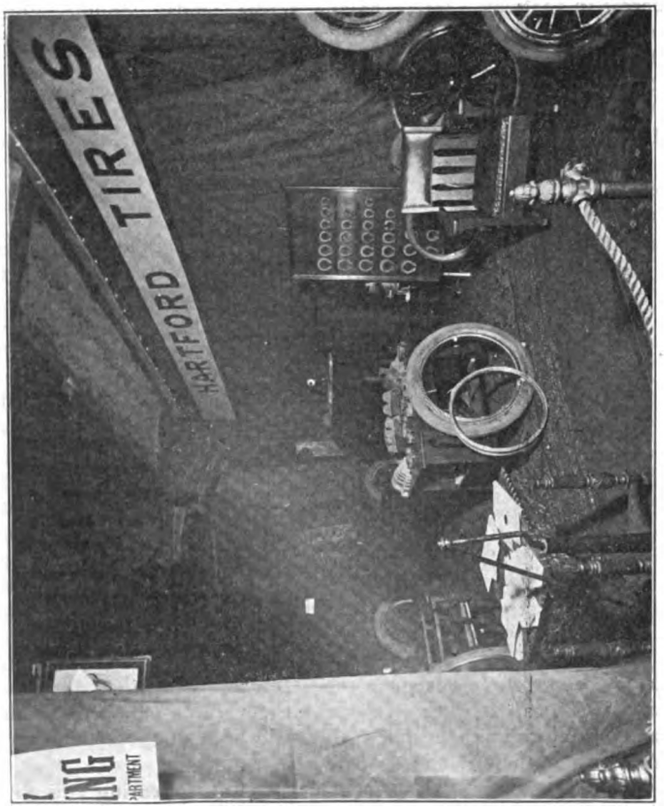
For the first time at any New York show the buggy type of runabout made its appearance in sufficient numbers to constitute a veritable "section" of its own, and a corner of no little interest as well. In all, seven makers staged machines answering to this description, all representatives of a rapidly growing class of makers of the middle west, who are coming into notice at a rapid rate. The Holsman, the only one of the group which had been seen in New York before show season, appeared with several improvements, among them being a new type of driving cable, thought to be essentially durable as well as flexible, a new motor, and a new form of motor suspension, comprising the use of a couple of tubular members placed transversely of the frame, and resting on a sort of sub-frame supported under the body sills, and at a distance of several inches below it.

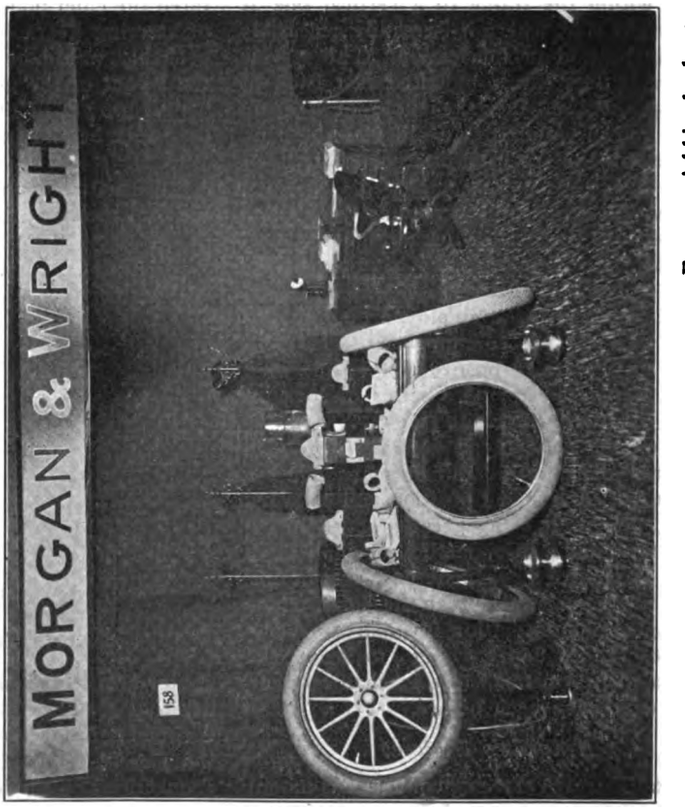
The Reliable-Dayton appearing this year in thoroughly redesigned form, had an opposed twin cylinder motor in front, a band clutch, sliding gear transmission with coun-

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Four Allied but Competing Exhibits.

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tershaft enclosed in a single housing, the final drive being by double side chains. In the Hatfield a friction disc type of transmission is employed, as in the Schacht and Pontiac. The latter, in addition to its friction transmission, has a special form of friction clutch device, taking the place of the differential on the countershaft, and intended to operate by automatically releasing the outer wheel on a turn, from the driving relation. The Kiblinger buggy has an air cooled motor, planetary change gear and double chain drive to each of the rear wheels. The horsepowers of these machines ranged from 8 to 15. All are of the true buggy type, with high wheels.

Commercial Vehicles.

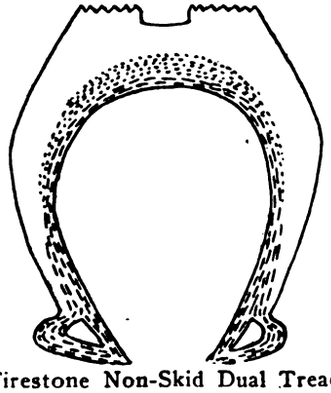
While the representation of commercial vehicles was not strong numerically, the exhibits staged occupied a considerable area, and "bulked" large and interestingly. The Rapid chassis, which is adaptable to a variety of purposes, was shown with no less than ten different bodies, the power and size of the chassis being suited to the work in hand.

Because of the simple construction of the two-cycle motor mounted in the Reliance trucks, which also were shown, a high degree of interchangeability is claimed. The cylinder units being of the same size, only a single series of standard parts need be carried by any owner for any type of vehicle, or for any number of different types. Further than this, the motors may be transposed from one chassis to another, thus making it possible to increase the engine power on occasion, and without rebuilding the vehicle. The Reliance sloping platform stake truck shown, was claimed to be an absolute innovation in the motor truck field, and particularly convenient for loading.

Among the several features observed in the construction of the new one and three-ton Logan trucks, were the use of massive radius rods for both front and rear axles, the use of ball bearings of the annular type in the change gear boxes, the arrangement of the four-cylinder vertical motors in front, under the footboard, and the heavy and serviceable looking brakes, of which two were mounted on the counter shaft, one on the driving shaft, and two more on the rear wheels. The heavy Manhattan trucks and sight-seeing vehicles have vertical motors, and an original form of change gear, selectively actuated, in which a direct high speed relation is obtained, the lay shaft being disengaged and stationary at same time. The mechanism of these, as well as the other commercial vehicles was impressively heavy and substantial looking.

The Tires and Their Appurtenances

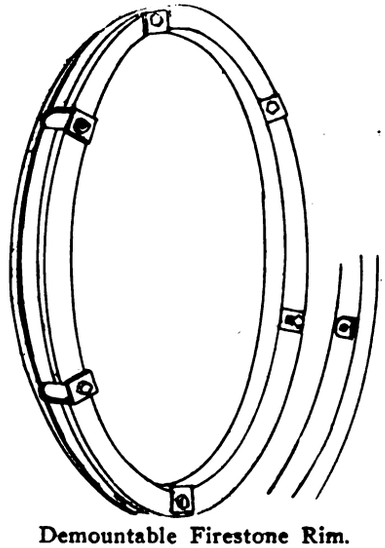
At the space occupied by the Diamond Rubber Co., of Akron, O., two new members of the Diamond tire family made their debut. The first of these was the "electric" tire, designed for use on electric vehicles in city service. Its chief feature is a very soft yielding outer case which completely absorbs the ordinary road shocks and obstacles met with in city driving. This casing is too tender for heavy cars or country roads, but is said to be entirely satisfactory for its special purpose and to reduce current consumption by about 25 per cent. over ordinary tires. The second tire, a solid, was new in material only, its form being on the lines of previous tires, but its material being white rubber, for which great



Firestone Non-Skid Dual Tread.

durability claims are made. The line of "stand pat" models was as complete as ever, the Diamond wrapped tread construction being featured, and the Marsh rim demonstrated.

In addition to the tires designed for use with the special Fisk rims, the Fisk Rubber Co., of Chicopee Falls, Mass., showed this year tires made for use on regular clincher rims, thus providing a complete Fisk line. Wrapped tread construction also characterized the 1908 samples shown. The display was enlivened by exhibitions of quick tire changing with the Fisk rim arrange-



Demountable Firestone Rim.

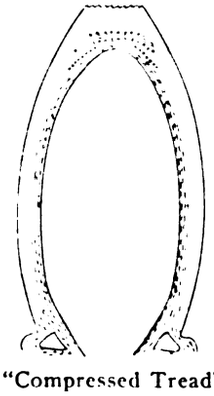
ment which permits of replacing a punctured tire with another fully inflated tire complete on its own rim.

Goodyear tires, made by the Goodyear Tire & Rubber Co., of Akron, O., were shown both complete and in section in a great variety of sizes and shapes. The Goodyear contingent were pleased at the census of cars exhibited which gave the Goodyear detachable rim a splendid showing. The operation of the rim was demonstrated.

Morgan & Wright, of Detroit, Mich., the Hartford Rubber Works, Co., of Hartford, Conn., and the G & J Tire Co., of Indianapolis, Ind., all featured new hard bead clinchers, with wire in the bead, the tires being suitable for use without lugs. The Midgley non-skid tread and the Midgley rim were also prominent in the displays.

A deep groove in the center of the tread and corrugations on the raised portions marked the new dual, non-skid tread offered by the Firestone Tire & Rubber Co., Akron, O. The new Firestone demountable rim was also shown. The wheel periphery is recessed in places to engage studs on the rim which holds the inflated tire, and the latter, after being put on the wheel is clamped at the side by suitable fastenings. The studs and recesses prevent the creeping of the dismountable rim on the wheel, and the clamps secure it from lateral play. The regular types of Firestones in pneumatic and solids constituted the remainder of the exhibit.

The Continental Caoutchouc Co., of New York, exhibited the new Continental rim for the first time, an industrious colored



Michelin "Compressed Tread" Design.

boy in uniform being kept busy lifting a completely inflated tire and its rim on and off the wheel. The tire which fits on the wheel is sufficiently greater in diameter to slip on or off very easily when desired, and to prevent its rusting or "freezing" on; but when the wedge shaped clamps are applied, the rim is rigid with the wheel and is capable of withstanding all strains which might seek to loosen it. A section of a very large Continental tire for special service was shown, in addition to the regular

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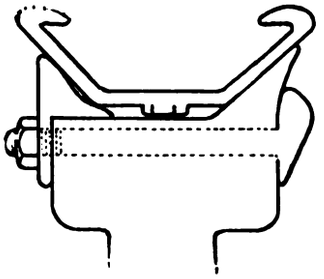


Continental types of clinchers with lugs.

Two new models of tires were shown at the space of the Swinehart Clincher Tire & Rubber Co., of Akron. One was a dual tire the halves of which were made in the usual Swinehart solid section, but in the middle of the rim, between the two tire parts a heavy chain was introduced, its function being to act as a non-skid and to strengthen the whole tire against lateral strain. The other was the new "cullular" tire, which is a square sectioned solid tire with numerous plain holes from the tread directed tangently toward the axis. A semi-pneumatic effect is ascribed to this construction in conjunction with a sucking action which lessens skidding.



Many an inquisitive hand was burned at the exhibit of the Newmastic Tire Co., of New York. To prove that the compound which the company offers as a substitute for air will not lose its elastic consistency when subjected to great heat such as it might encounter through the friction of fast road work or the action of the sun, a large piece of the compound was placed on an electric hot plate, where it broiled and scorched but did not melt. Unaware of the calorific altitude of either the electric plate



Continental Demountable Rim.

or the piece of compound resting on it, visitors were prone to finger them, always with immediate and violent results. Polite salesmen were kept busy restoring the unfortunate ones to good humor by explaining the nature of the test and pointing to the victim's own experience as an evidence that the Newmastic was really hot. The Parker rim, which consists of a clincher rim split in the center and having the distance betweeen the two clinchers variable according to the degree that the side bolts are tightened up, was also shown. It was originally designed to make easier the application of Newmastic filled tires, but is now offered for regular air inflated clincher tires as well. With the latter the air pressure in the tire may be increased by simply binding the clinchers closes together instead of pumping in additional air, the operation requiring only a tightening up of the bolts.

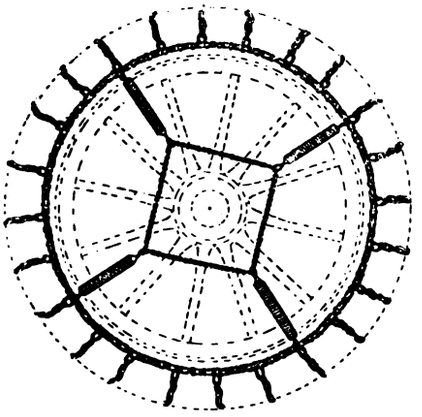
Wrapped tread construction was disclosed as a 1908 feature of Ajax tires, at the exhibit of the Ajax-Grieb Rubber Co., New York City and Trenton, N. J. Smiling assurances from the "Ajax Girls" on the walls tempted the visitor to enter and discuss the Ajax 5,000-mile guarantee which will obtain for the coming year as heretofore. The tires were exhibited in a number of sizes.

The Empire Automobile Tire Co., of Trenton, N. J., had an exhibit that was severely simple, but which was inviting as an oasis of rest since it had a welcome for friends who wished to sit and watch the crowds or read the trade papers. The 1908 Empire tires were shown, the emphasis being laid on quality rather than on any rad-

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ical new feature of design. In this respect the exhibit resembled that of several other manufacturers with displays of tubes and casings.

American made Michelin tires executed their official bow to the public in the exhibit of the Michelin Tire Co., of Milltown, N. J. The feature of the exhibit was the new "compressed-tread" which made its first appearance in the United States on this occasion, although it already has a trail of racing glory behind it in connection with European contests. The construction of the tire is such as to compress the rubber of the tread from each side when the tire is inflated. This effect is obtained by making the casing proportionately narrow, with the inner side quite pointed toward the tread.



Snugging Device for Weed Chains.

An exceedingly stiff arch of canvas concaves over the air space and when the tire is inflated the canvas arch straightens out to some extent and in doing so compresses the rubber tread which backs it. It is claimed that practice has shown remarkable results for this feature, cuts and gashes in the tread being immediately compressed tightly together again instead of being opened and distended by the air pressure from the inside. The full Michelin line also includes the flat tread type clincher, the anti-skid clincher with steel rivets and leather tread, and a quick detachable round tread type with hard wire bead, the latter made only for the American trade and in American sizes. It is supplied in both rubber and anti-skid tread.

Leather covered inner tubes occupied a prominent place in the offerings of the Leather Tire Goods Co., of Newton Upper Falls, Mass. A new tire armor of linked metal parts was also part of the exhibit, together with metal studded leather tread protectors and non-skid straps.

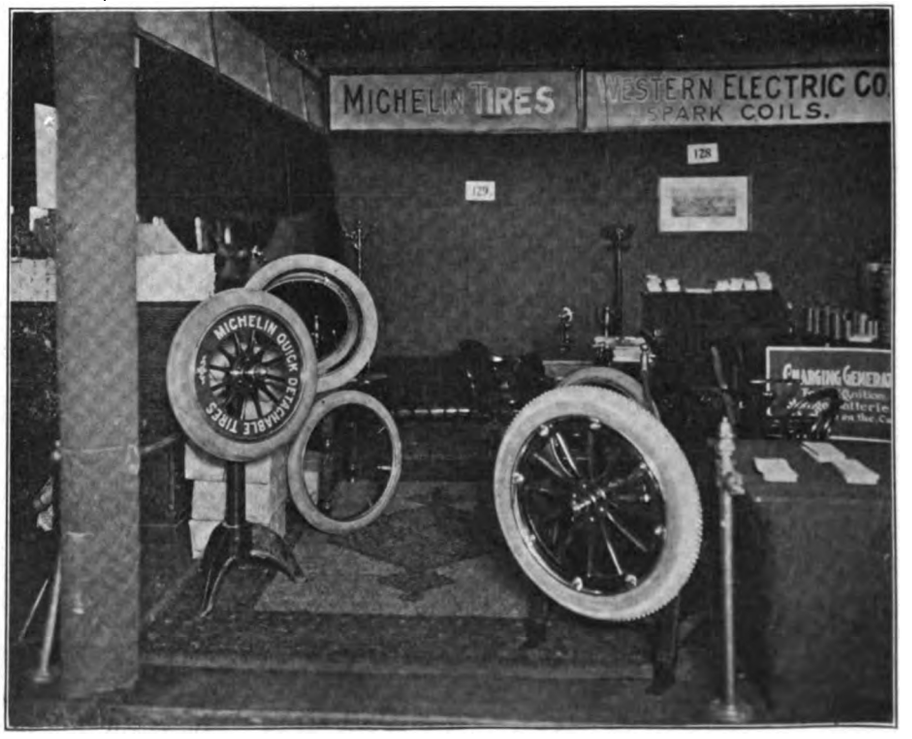
By the use of four spiral springs to a wheel the Weed Chain Tire Grip Co., of New York, has hit upon a successful method of keeping the chain grip snug to the tire without binding, doing away with the rattling of the chains against fenders or rods, an annoyance which sometimes occurred when the chains were loosely fitted. The springs are arranged quadrilaterally and



draw towards the center of the wheel. Since they are fastened to the side chain to which all the cross chains are attached, the latter are kept close to the tread. The device was shown mounted on a wheel. A non-skid grip for solid tires was also shown. It consists of linked plates across the tire tread instead of chains, the plates immediately over the tread being broad and flat, but with rectangular holes in the center.

Labelled with the names of the cars on which they are used, the showing of the Midgley pressed steel wheels was significant of the growing popularity of these products of the Midgley Mfg. Co., of Columbus, O. Sections of the wheels, indicating their construction and assembly were available to those who took an interest in the subject. The new Midgley rim, with its removable flange and facility for taking either clincher or Dunlop type tires was also in view.

Not at all times is the chauffeur given his choice of how he will come home if he happens to have a blowout or a puncture. The Presto detachable rim was designed with this idea in mind. It permits of the use of



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any style or make of tire the driver may have with him, or is able to buy or borrow; he is restricted only in size, but not in small diameter, and when a tire cannot be found, he can remove the attachments from the rim and come home on a wide steel flat tire not unlike those found on heavy horse drawn commercial vehicles. By an ingenious shaping of both sides of removable flanges, to be held in place by clips adjustable to varying widths this invention of L. H. Broome permits the immediate fitting of a Dunlop, a clincher, or any detachable, removable rim or any other type of tire to the wheel with no other tools than a small monkey wrench, and any wheel is made ready for the Presto detachable rim by simply turning down the felloe 3-16 of an inch.

Pertaining to Parts and Accessories

Ignition Apparatus.

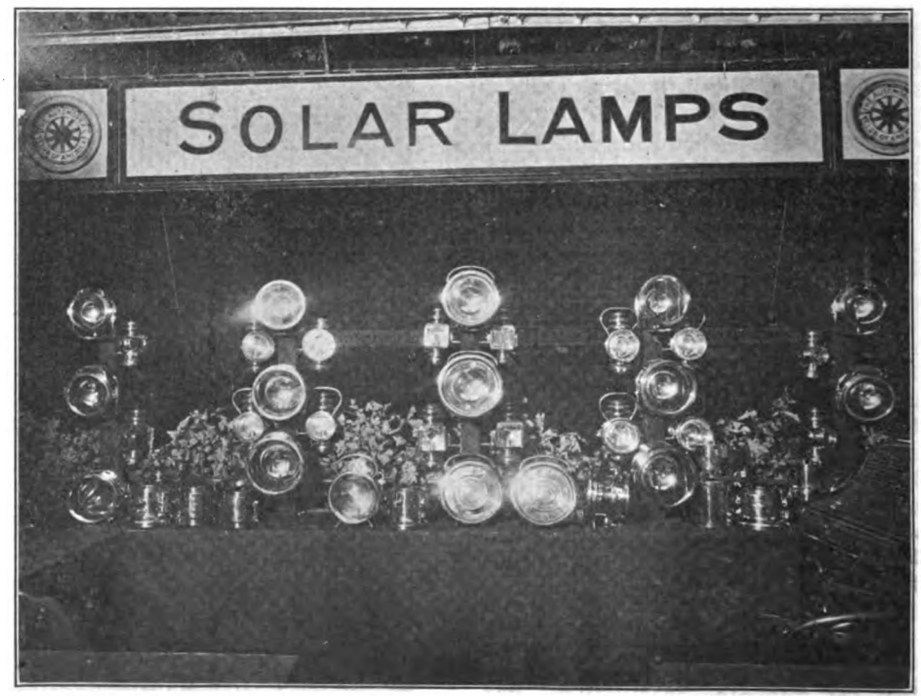
Three types of magnetos were shown at the stand of the Splitdorf Laboratory, New York City. The trio included a low tension, a high tension and a low tension with coil to give high tension current. With the latter system a single coil is used and the high tension current induced in it is distributed to the various plug leads through a distributor mounted on the magneto. The latter thus performs the double function of supplying a primary circuit to the coil and of distributing the secondary circuit from the coil to the different plugs. In connection with the system the coil box is equipped with a switch by which magneto or batteries may be used. That part of the coil equipment which is used in connection with the batteries has a vibrator but the coil which takes its primary current from the magneto is non-vibrating. The balance of the exhibit included samples from the very complete Splitdorf line of timers, coils, distributors, plugs, plug switches and the like.

Refinements in ignition equipment characterized the exhibit of the Connecticut Telephone & Electric Co., of Meriden, Conn. The coil offered by the company for 1908 is fitted with a "kick-switch" having a large, substantial knob which will not break off when hit a drive from one side to the other with the foot. When thrown to the side marked "battery," it closes the battery circuit to the coil, making it subject only to the interruptions of the timer, and at the same time short circuits the magneto circuit. When the cut-out plug is withdrawn, it opens the battery circuit and closes the magneto circuit so that any one tampering with the car would find it impossible to start the motor on either the battery or the magneto. The phenomenon of getting a steady light from a circuit having a vibrator was shown to be possible by the inspection lamp which the exhibitors supply equipped with a plug which may be inserted in the coil front. This is a neat little lamp with a handle and a generous length of cord, and when plugged into the primary battery circuit of the coil it shines steadily and brightly despite the vibrator, because the resistance it offers to the current flow is sufficient to make the vibrator inoperative. A new timer and a new distributor were shown. The distributor is constructed so that there is no back or forward movement of the secondary wire connections when the timing lever is moved to advance or retard the ignition. While a roller contact is used in the timer shown, a rather clever construction marks it from the ordinary run. Instead of having a flat face or rolling surface, the roller has a double bevel while the stationary contacts are like a double track with a slot between, into which the bevel is forced. The two sides of the contacts are of different height, so that the bevel cannot roll without some degree of slippage on one or both of them. The effect of this construction is to avoid having the contact faces of the roller touch the fiber insulation from which they might acquire a glaze, and the sliding on the contacts makes both the latter and the roller bevels bright and clean. A full complement of volt and ammeters and ignition supplies were also displayed.

As one of the pioneer magneto manufacturers, the Remy Electric Co., of Anderson, Ind., has each year shown something new in this form of ignition, and this year it presented a new model high tension, alternating current magneto, known as the Model F, which for simplicity of operation appeared to great advantage. The systems offered provide either for a distributor on the magneto or the running of two plugs in series at a time on a four cylinder motor. No coil is used in connection with the magneto, the secondary winding being on the armature, so that the whole outfit makes a very neat and compact ignition equipment.

Movement, and lots of it, attracted the visitor to the space of the Witherbee Igniter Co., New York City. The hive of live honey bees which stood in the middle of the space as a reminder of "with-a-bee" drew various expressions of alarm or interest from those who gazed at it. Everything on the counters that was capable of buzzing, sparking or flashing light was in circuit with one of the new loose-ring timers, and the winking of the electric lights and the hum of the coils together with the sharp crack of the jumping high tension in the spark plugs had both a fascinating and a confusing effect on the average visitor. In addition to the well known Witherbee batteries of previous years, the company exhibited its line of new "Wico" specialties, including coils with white porcelain tops, timers and distributors of novel design, and spark plugs and minor accessories, such as an electric cigar lighter, recommended for lighting one's cigar or cigarette while traveling 60 miles an hour, an incidental evidence of the rapid age we are living in.

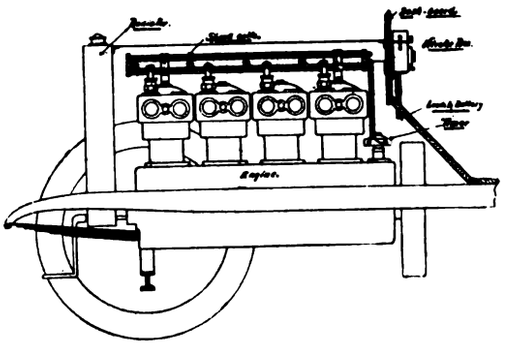
Two complicated but delicate looking instruments supplementing the usual display of coils, magnetos and sparking plugs at the exhibit of the Heinze Electric Co., of Lowell, Mass., attracted the attention of both the idle curious and the seeker after ignition information. Investigation developed that the instruments were not them-



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selves designed for motor car use, but were used for testing the materials and the performance of Heinze coils, one of the devices being used for determining the magnetizing qualities of the soft iron used in the coil cores, and the other for indicating the voltages of the secondary currents, which in Heinze coils run very high. The magneto ignition system put out by the company this year provides for a single unit coil with a distributor mounted on the magneto. The regular line of coils and switches was shown, with refinements in detail over previous models.

Quite out of the ordinary, both in design and arrangement, the new synchronized ignition system of the Western Electric Co., of New York and Chicago, was the subject of careful study by both professional and amateur investigators interested in ignition problems. The chief visible characteristic of the outfit shown is a long cylindrical coil box placed alongside the cylinder heads of the engine, from which only short leads of high tension cables are necessary to convey the current to the plugs. This coil box, which is but little larger in appearance than the insulating tube sometimes used along the side of the engine to convey the secondary wiring, contains a separate coil unit for each cylinder. The coils themselves are not fitted with vibrators, but a single vibrator on the dash serves them all so that they deliver the spark of a vibrating coil. The primary current goes through the dash vibrator to a distributor, which directs it to each coil unit in turn. It will be seen that this arrangement gives nothing but low tension wiring from the batteries to the dash vibrator and from there to the coil tube along the top of the engine, so that the secondary wiring is simply the short leads from the coil tube to the plugs. This does away with the possibilities of high tension current leaks and short circuits to the frame that are incurred in long secondary current wiring. By reason of the fact that the demands made on the single vibrator are multiplied by the number of cylinders in the engine, provision is made to prevent the platinum points pitting from the flow of current in one constant direction. This is accomplished by equipping the vibrator with a switch which, when turned on before



Western Electric Coil Disposal.

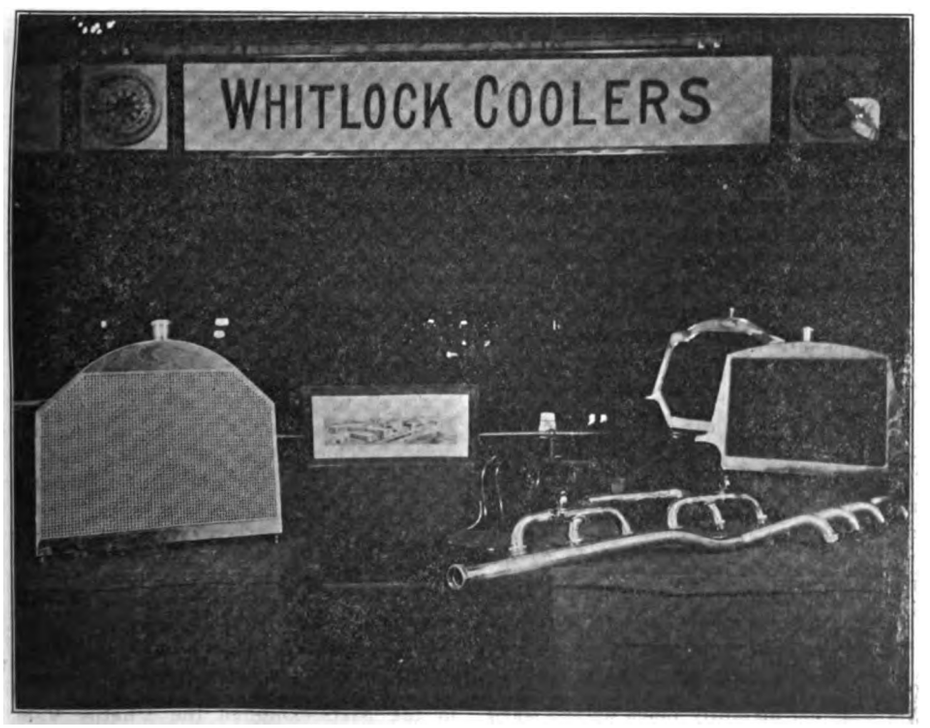
starting the engine, reverses the poles from what they were on the last previous running of the motor. This change of polarity each time keeps both platinum points of the vibrator restored of any losses. While either or both of the two sets of batteries may be used, the pole changing switch has to be used in stopping and starting the engine so that its operation cannot fail through thoughtlessness or neglect. Great economy of current consumption is claimed for the system, the figures of a recent experiment being given as a current consumption of only .3 amperes for a six cylinder engine, with a primary current supplied by four dry cells.

Incandescent lamps of a whiteness and brilliancy not ordinarily met with testified to the power of Apple ignition and lighing current at the exhibit of the Dayton Electrical Mfg. Co. The system of "floating the battery on the line," which the company originated, was made clear to the inquirer. It consists of a small dynamo or generator actuated by the car engine, the current from which passes through an accumulator, in the circuit to the coil. When the car engine is not running, the accumulator may be called upon to give up some of the current which it has figuratively taken as toll when the dynamo was in operation. Thus while the engine is running the current is supplied by the dynamo, and when the engine is stopped the accumulator is available for lighting or for starting on the spark. The regular line of ignition supplies made the balance of the exhibit.

The great length of the sparks emanating from a modest little coil at the booth of the Kokomo Electric Co., of Kokomo, Ind., created the suspicion on the part of observers that the primary current for the coil was supplied by a large dynamo and that the coil was near the limit of burning up or rupturing. The demonstrator, however, was at all times willing to convince the skeptical that the current came from only an ordinary ignition accumulator and that the length of the spark was entirely normal for the coil. Ignition specialties of the familiar types also were shown.

A handsomely finished low tension magneto, comprising a self contained circuit breaker and selector, doing away with distribution and timer is one of the exhibits of the K-W Ignition Co., of Cleveland, O. In equipping a car with this magneto there is used in conjunction with it a two unit non-vibrating coil for the four cylinder types of engine, the coil being so arranged that a spark occurs simultaneously in the exhausted cylinder and in the compression. For cars equipped with vibrating coils this company is putting out the K-W Master Vibrator to correct the synchronism of the engine by causing each cylinder to fire its charge in exactly the same angular position

Since spark plugs first were employed, porcelain and mica have had the field to themselves, almost without challenge from other insulators. This year, however, glass appears in the exhibit of the Anderson Glass Spark plug. It constitutes a combination of pyro-elastic glass welded to steel. As an insulator of electricity glass has always been recognized as most perfect, and together with the fact that it is non-absorbent it suggests infinite possibilities. In the Anderson invention a large, strong shell of steel has the usual metal core which is surrounded by the glass forced in while molten and welded to the metal so that the finished plug is actually one piece, with neither gaskets or washers necessary to make it tight. The cylinder explosions can



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be seen through the top of the plug, thus providing occular means for regulating the explosive mixture.

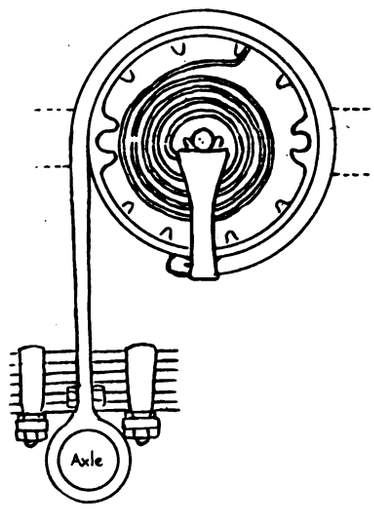
Since the earliest days of the jump spark there has been almost no change in the principle of the spark plug; it is true that refinements have occurred from time to time, resulting in the neat compact plug in general use to-day, where earlier designs were cumbersome, and in their finish crude; yet the very earliest designs contained the two stationary points or a construction varying but little from this, and then as now the inventor's chief claim was of the case with which the sparking surfaces could be cleaned and the unlikelihood of the plug fouling or short circuiting. At the show this year is exhibited a "vibrating" plug, the product of the Triumph Engineering Co. of New York, which marks a departure from the accepted standard. The plug consists of three parts, the sectional shell or base, the bushing and the core; the core is of the usual form employed in the mica plugs, mica discs compressed around a metal center, but has a valve seating around it, which fits into the bushing and works like a piston in the shell, as the compression and exhaust stroke of a four cycle engine and each upward stroke of the two cycle force the plug core or armature, as it may well be called, up into the valve seat that is constructed in the bushing. The continued rapid movement of the core is designed to prevent the carbon or oil deposits which usually cause short circuiting; the poppet valve construction prevents loss of compression, and yet the cylinders may be primed through the plug without loosening the latter or in any way affecting its position.

Compact transformers and rectifiers were shown by the E. & M. Development Co., of Asbury Park, N. J., suitable for converting alternating lighting current into direct for ignition battery charging, and a variety of accumulators and dry cells were shown by other exhibitors, including storage batteries of large capacity and very low price by Geiszler Brothers, of New York.

Shock Absorbing Devices.

While the term "shock absorber" should in a strict sense, be used only with a careful regard for the propriety rights of its originators, the makers of the Truffault-Hartford, yet it is such a useful descriptive term that it is now generally accepted as embracing many devices of the same general class, even including special spring suspensions. The field was well represented at the show. The Hartford Suspension Co., New York, put on view the 1908 Truffault-Hartford shock absorbers, equipped with indicator dials by means of which the proper friction tension for any car may be arrived at without the necessity for experiment. The new styles also have a construction which makes it impossible for slush or grit to get to the friction surfaces. The Hotchkin anti-jolt device, made by the Hotchkin Mfg.. Co., of Chicago, was mounted on a display stand illustrative of the many styles of lugs and fittings with which it can now be supplied, to facilitate application. The latest Diezemann, with universal joints at the ends of the arms where they attached to frame and axle, respectively, was to be seen at the space of the Diezemann Shock Absorber Co., of Hoboken, N. J. A pneumatic brass cylinder shock absorber was numbered among the specialties of the Turner Brass Works, of Sycamore, Ill., and the Gabriel Horn Mfg. Co., of Cleveland, exhibited its friction shock absorber.

A whole car was used to demonstrate the workings of the Stolp shock absorber. The system requires the moving of the rear axle back several inches to the rear ends of two



F. R. V. Friction Recoil Check.

long side bars underneath the frame. The points of support for the rear of the body are then placed on a rocker arrangement on the side bars, and the front ends of the side bars are supported by a vertical shackle dropped from each side of the frame. Opposed spiral springs in the shackle keep the side bar ends normally at mid point, but when a bump is struck the rear axle of the car goes up and the front end of the side bars go down, while the rocker which supports the rear springs of the cars is just at the fulcrum point, and little shock is conveyed to the passengers. Sager spiral springs for correcting and easing of spring action were shown by the J. H. Sager Co., of Rochester, N. Y., at a nearby stand.

An inexpensive shock absorber is among the exhibits of the F. R. V. Auto Parts Co., which they maintain automatically prevents the rebound of motor car springs when riding over rough roads.

The absorber consists of five parts, the drum, belt, arm, coil spring, and cover. The axle of the drum is fastened to the frame or upper spring support; the belt passes over and partially around the drum, one ending fastened to the car axle. When the car strikes an obstruction or rut and the car springs contract, the coil spring in the absorber drum to which the free end of the belt is attached instantly takes up the slack in the brake belt preventing violent recoil of the springs which constitutes the shock.

Unless a very close inspection is made of the Reliance Spark Plug the investigator wonders by what process porcelain has been converted to a conductor of electricity for no sparking point is easily visible in the core of the plug manufactured by the Jeffery-De Witt Co., Newark, N. J., but with a magnifying glass there may be seen a minute platinum wire which comes flush with the core in its center and from which the spark jumps. Working on the theory that a spark leaving such a minute point will be concentrated and intensified the inventor baked in porcelain a platinum wire seven-thousands of an inch in diameter and found in his tests that the heat and scouring action of the spark against the surface of the insulator with which it was flush instantly destroyed any short circuiting substances which may have collected around and over the point, in fact, the exposed surface was too small to gather an accumulation which would not be immediately pierced by the spark. This is the main and prominent feature of the Reliance plug which is otherwise of the same appearance as the generally accepted designs. In the Palace exhibit the plugs are being demonstrated with the points under water where apparently unaffected, they are a source of wonder to those whose experience on the road or in an open boat, in the rain, has taught them the short circuiting tendencies of water.

The Acme Spring Check Co. demontsrated a new recoil check styled "The Shocsorber," consisting of a simple arrangement of four small rollers placed in tapered openings equidistant around the edge of a drum. The arms or levers are attached to this drum and move with entire freedom when the opposite ends, which are fastened respectively to the frame and axle, are closing as the body is sinking toward the axles. When the springs are depressed to the maximum of the shock and attempt to regain their normal position by throwing the car body violently upward, the rollers are directed into narrow portions of the tapered openings by small springs and exert a friction on the ring which is not released until the body is aga'n in its usual position to the axles.

Speed Indicating Instruments.

The group of speed indicator exhibitors were all to be complimented on the displays they made of their respective instruments. The Jones Speedometer, of New York, and Stewart & Clark, of Chicago, revealed new instruments at low prices in addition to their regular lines or higher priced indicators, but the Warner Instrument Co., of Beloit, Wis., offered only its standard Auto-meter, with a clock and electric light attachment as available extras. W. S. Jones, of Philadelphia, in addition to showing the indicator which he has handled in the past, exhibited the Phelps Vehicle

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recorder, a device which may be locked on a car or vehicle and which, without any driving connections with either wheels or motor, will register the periods of travel. It consists essentially of a clock mechanism rotating a disc on which a paper record for a whole week may be placed. A small oscillating pendulum inside the case makes the recording pen give an irregular jagged line when the vehicle is moving, leaving a smooth line tracing while the vehicle is standing still. The periods of travel or rest are thus graphically recorded, the vibration of the vehicle on street or road being sufficient to affect the pendulum in the instrument. Refinements in detail were observable in the Springfield Motometer, made by the R. H. Smith Co., of Springfield, Mass., the Index, made by the Index Speed Indicator Co., formerly the Oliver Instrument Co., of Minneapolis, Minn., and the Loring, of New York.

It would be interesting to know how much commission the Model Mfg. Co. will have to pay to a chauffeur to sell him a Timograph for the "boss's" car. This simple machine, about 5 inches high and four in diameter, may be attached to any part of the car and if wound once a week will present an absolute record of every movement of the car, recording even the short stops required by the traffic regulations. Unless one possesses the key the Timograph cannot be removed from the car nor can the record be altered. The plan is not unlike the dial of a watchman's clock and is not apt to meet with favor with the "joy riding" chauffeur, who cannot easily explain the midnight record when the owner was home asleep.

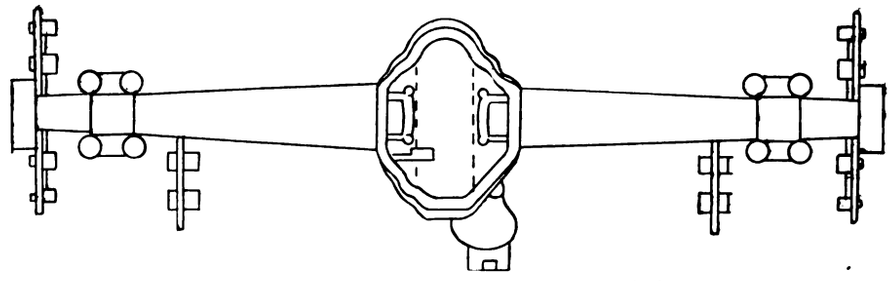
Acetylene and Oil Lamps.

Really new things in lamps were disclosed at the stand of the Badger Brass Mfg. Co., of Kenosha, Wis., and New York City. The first exhibited sample of a Solar lamp equipped with the Besnard system of light refraction and projection and fitted with an eclipsing shutter for diminishing the dazzling glare at will, was shown. The chief features of the lamp apparent to the eye are that instead of a bull's-eye lens supported by a bracket in front of the flame or cemented to the center of the front glass, the whole front glass is itself a condensing lens, while back of the flame there is a hyperbolic reflector. The dimming mechanism is simply a little arm with a round black disc on it, which can be swung down back of the flame to intercept the rays which ordinarily focus from the reflector to the lens. The arm is actuated from the driver's seat by means of a small handle with a flexible cable lead to the lamp or lamps. The standard Solar lens mirror headlights and the fancy side lights and tail lights were displayed, but these were supplemented by oil lights finished in a manner unique in lamp making. The finish is a plain black which the uninitiated might easily mistake by its appearance for common japanning. It is a secret process finish heretofore used almost exclusively on government range finders and similar instruments and never before applied to automobile lamps. Its virtues are that mud cannot spoil it, dents cannot crack it, it retains its lustre through all kinds of hard knocks and that it is rich in general outdoor wearing qualities.

Other lamp exhibitors also presented lamps in black nickel or gun metal finishes, but in the main their exhibits were chiefly detail changes in previous models.

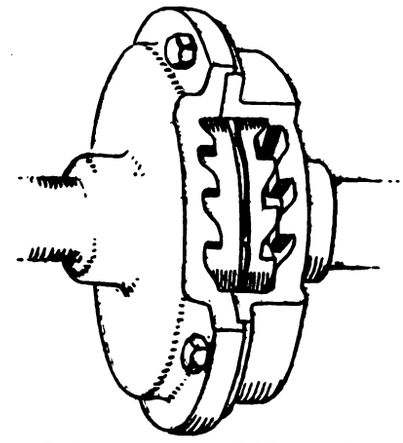
Parts for the Builder.

To the layman, ignorant of mechanical matters or automobile construction, there was little to attract the eye in the exhibit of the Wm. Cramp & Sons Ship & Engine Building Co., of Philadelphia, in whose space were a lot of castings of odd sizes and shapes. But the experts who wandered that way were arrested by the sight of a complete rear axle differential housing and axle tubes, all cast in one piece, with spring saddles and brake mechanism supports all on. The casting was of Parsons manganese bronze and was in many respects a wonderful piece of work. By virtue of doing away with the necessity for a great deal of riveting and brazing, the casting is said to offer great economy and more than usual strength. Front axle castings of the same material for various famous car makers were also shown, together with bushings for bearings, made of Parsons white brass.



Cramp One-Piece Casting for Rear Axle.

While at previous shows the American



F. R. V. Gearless Differential.

& British Manufacturing Co., of Bridgeport, Conn., has exhibited automobile parts of its own manufacture, at the Palace show it disclosed motors of the kind it is now making under contract. The famous Herreshoff motor, rated at 40 horsepower, was displayed with sections cut away to show the valve action and the arrangement of the interior. The horsepower test figures given in connection with the total weight of the motor indicate that it is above the average in performance, and it is given as a part explanation of the inventor's success in getting such results that as a marine architect he generated many curves and sweeps that are known only to the ship designer.

Great display racks of heavy axles equipped with Timken roller bearing hubs formed the big feature of the exhibit of the Timken Roller Bearing Axle Co., of Canton, O. The form of axle with roller bearings in the steering knuckle head received considerable attention from engineers and designers visiting the show, and the newest application of the Hedgeland rear axle was also given critical examination. Large hubs, some 3 inches or more, were shown as 1908 additions to the company's range of offerings to the manufacturer who wishes to buy his axle and hub parts.

The F. R. V. gearless differential, which permits the faster wheel to override the slower one by means of a ratchet arrangement, was shown taken apart and also assembled on a complete rear axle with automobile wheels. The demonstrations took in back and forward tests, and the simple mechanism, with only five parts, apparently did everything required of such a device. The ratchets which might be expected to prevent driving the car backward, automatically meet the condition by jamming together and making the ratchet effect disappear. The essence of the construction is that only one side of the ratchet arrangement can act at a time.

As beauty lies in the eye of the beholder, the exhibit of the Light Mfg. & Foundry Co., of Pottstown, Pa., was beautiful or not, according to the observer's knowledge of fine castings. To the technical eye the specimens of work done by the company in aluminum alloy castings of crank cases, covers and the like, were of extreme interest, and the automobile in miniature, made of the same sort of castings caught the attention of many who were necessarily ignorant of the value of the rest of the exhibit.

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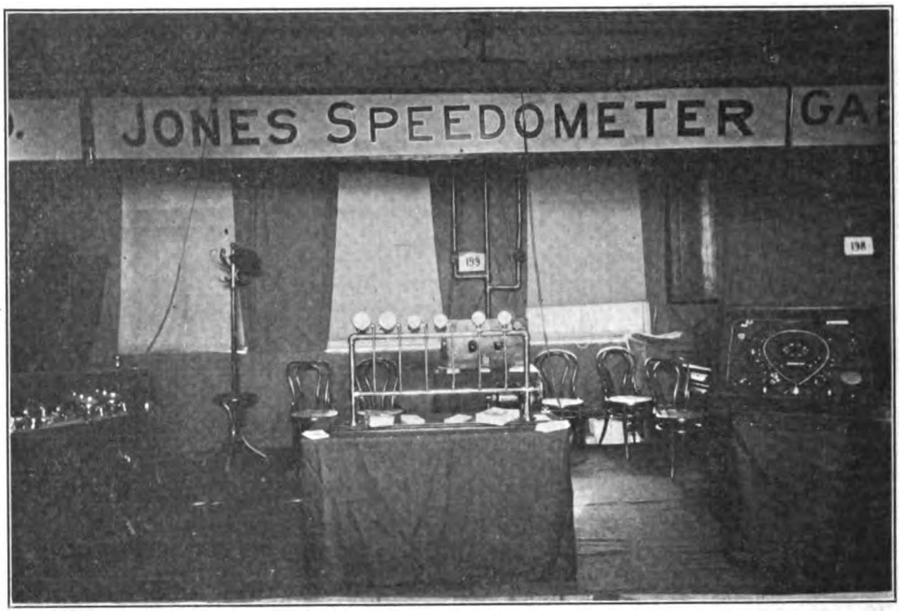
Whitlock radiators in an imposing array of styles bore evidence to the Whitlock Coil Pipe Co.'s peculiar capabilities for this sort of work. Specimens of pipe bending and manifold work were also shown to demonstrate the specialized manufacture for which the big Hartford plant is well fitted. Some of the radiators exhibited were of the styles made for prominent cars, suggesting the approval with which the automobile manufacturers regard them.

Such improvements as have been incorporated in the manufacture of Whitney chains cannot be indicated by mere external appearance, so that the big rack of chains in the space of the Whitney Mfg. Co., of Hartford, Conn., looked much the same as in previous years, showing the usual variety and testifying to the increasing demand for the company's products. Display boards of the keying system which the Whitney Co. fathers were likewise shown.

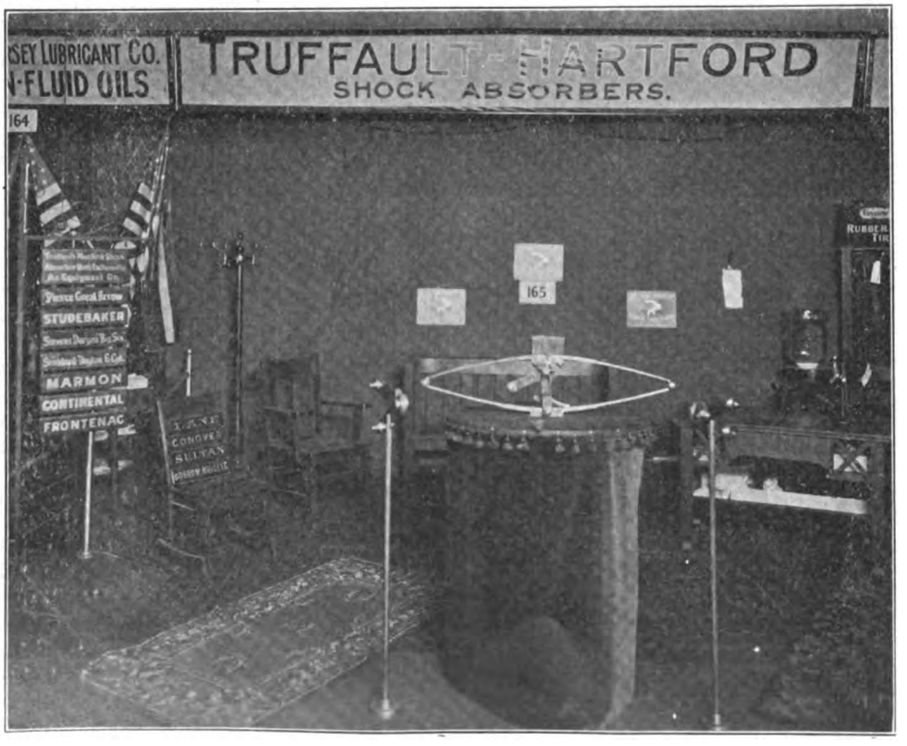
A rear axle differential housing and axle tubes drawn from sheet steel was a new offering of the American Ball Bearing Co., of Cleveland, O., in connection with the regular line of bearings and axles. In fact the drawn steel housing is so new that delivery dates on it are placed in the future instead of the immediate present.

Hoods, fenders and radiators in profusion were observable in the Briscoe Mfg. Co.'s space as off-hand specimens of the kind of work done at the factory in Detroit. Seemingly no attempt was made to show all the great variety of styles in which Briscoe radiators are made or all the classes of work that the concern is capable of doing.

In the center of the space of the Kinsey Mfg. Co., of Dayton, O., a chassis frame bore a hood of the company's manufacture, together with a radiator, fenders and other parts of which it makes a specialty. The display was designed to suggest the preparedness of the concern in supplying the automobile manufacturer with parts which he would find no advantage in making at his own plant.



Chains with the imprint of the Diamond Chain and Mfg. Co., of Indianapolis, on the links were exhibited in simple display on a table. Spectacular methods of exploiting such a well known product are naturally hardly worth while, since it is by reputation and performance that chains are judged. The built-up chain having hardened steel bushings with large rivets, and the latest chrome steel chains were shown as leaders. The company also exhibited its axles and steering connections.



At the Baldwin Chain & Mfg. Co.'s space both chains and sprockets were shown. The Baldwin chain with detachable links was, of course, featured, and the presence of the sprockets asserted the Worcester company's competency to supply full chain drive equipment.

An electric motor taking the place of the regular motor, just for the purposes of the show, a very good demonstration of its rear axle and differential was given by the Standard Roller Bearing Co., of Philadelphia. Incandescent lights concealed in the housing made it possible to view the mechanism through glass covers substituted for the regular cover plates. Axles, parts and ball bearings were the products shown.

Columbia locknuts in two general styles and a variety of sizes were exhibited by the Columbia Nut & Bolt Co., of Bridgeport, Conn. Split sections of the nuts on threaded bolts made clear the method of obtaining the locking effect.

Quite a show in itself, the space of Chas. E. Miller, the famous New York jobber, whose stores are dotted over the continent, contained such a variety of automobile goods as to impress even the most casual visitor with the immensity of his main stock. Most of the goods in the Miller space at the show, however, were but samples of full lines of clothing, goggles, jewelry, novelties and accessories, and did not give representation to his stock of parts and supplies. However, the celebrated Brampton chains were shown in many sizes, together with an old Brampton chain that has seen an unconscienable mileage. The Miller speed indicator was attractively displayed on a stand with a variable speed drive so that the steady action of the hand might be observed. Copies of the big Miller catalog were handed to visitors, supply-

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ing them with a book of reference on supplies and accessories.

Improved types of the transmissions, differentials and steering gears of the Brown-Lipe Gear Co., of Syracuse, N. Y., were shown in that company's space. The selective transmissions had their lids off so that the public might see the compact arrangement of the gears and try the feel of the change gear lever.

Each year the users of gasolene engines find a new indicator gauge presented for their approval and at the Palace show a very clever and simple invention is shown by the Webster Mfg. Co. A brass tube, partially slotted on one side for the free movement of the rod to which a ball float is attached, contains a pair of gears, the rise and fall of float changes their relative positions, the change being depicted on a silvered steel face, calibrated to inches, where a hand indicator under glass presents an always ready true indication of the quantity of gasolene in the tank.

Among the smaller specialties an electric gasolene gauge made by the Auto Pump Co., of Springville, N. Y., attracted considerable attention. The face of the gauge was in divisions, and upon pressing a push button a bright electric light would shine behind the division answering to the fuel level, indicating whether the tank were half full, three-quarters full, etc. The device is so constructed that upon the fuel level getting close to the bottom the alarm light of "Empty" starts of itself without pushing the button. The float in the tank has roller contacts on two sides of a vulcanized rod running to the tank bottom. On one side the insulating rod has individual contacts for each light in the gauge and on the other it has one common electrical return, so as the float goes up and down it makes the contacts for the different lights.

A wealth of minor accessories of one sort or another were shown at different spaces. Tire jackets and inner tube bags were noticeable, leading to the belief that drivers are growing to understand their value in saving tire money. The Gilbert Mfg. Co., of New Haven, had a very complete line of them, including some in gay colors to match special car bodies. The company's display also included leather protectors for various parts of the car, such as steering knuckles and universal joints, together with slip covers, and rain aprons for both cars and drivers.

The full list of exhibitors and the goods they displayed is as follows:

Automobiles.

American Motor Car Co., Indianapolis, Ind.
American Gasolene Cars.
One 4-cylinder chassis and one 4-cylinder roadster.

Atlas Motor Car Co., Springfield, Mass.
Atlas Gasolene Cars.
One 3-cylinder roadster, one 2-cylinder runabout, and one 4-cylinder touring car.

Acme Motor Car Co., Reading, Pa.
Acme Gasolene Cars.
One 6-cylinder touring car, and one 4-cylinder touring car.

Allen-Kingston Motor Car Co., Kingston, N. Y.
A-K Gasolene Cars.
One 4-cylinder touring car and one 4-cylinder roadster.

Anderson Carriage Co., Detroit, Mich.
Anderson Electric Cars.
One electric coupe and one electric Victoria.

Austin Auto Co., Grand Rapids, Mich.
Austin Gasolene Cars.
One 6-cylinder touring car, one 6-cylinder limousine and one 6-cylinder roadster.

Abendroth & Root Mfg. Co., Newburgh, N. Y.
Frontenac Gasolene Cars.
One 4-cylinder touring car, one 4-cylinder roadster, and one 4-cylinder limousine.

Bartholomew Co., Peoria, Ill.
Glide Gasolene Cars.
Two 4-cylinder touring cars, one 4-cylinder limousine, and one 4-cylinder model engine.



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Buckeye Mfg. Co., Anderson, Ind.
Lambert Gasolene Cars.
One 2-cylinder roadster, one 4-cylinder chassis, and two 4-cylinder touring cars.

Brush Runabout Co., Detroit, Mich.
Brush Gasolene Cars.
One 2-cylinder runabout, one 1-cylinder delivery wagon, and one 1-cylinder runabout.

Crawford Auto Co., Hagerstown, Md.
Crawford Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder landaulet, and one 4-cylinder touring car.

Cameron Car Co., Brockton, Mass.
Cameron Gasolene Cars.
One 4-cylinder runabout and one 4-cylinder roadster—both air cooled.

Carter Motor Car Corp'n, Washington, D.C.
Carter Gasolene Cars.
Two 8-cylinder air-cooled touring cars.

Cleveland Motor Car Co., Cleveland, Ohio.
Cleveland Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder limousine, one 4-cylinder roadster, and one 4-cylinder touring car.

Continental Automobile Mfg. Co., New Haven, Conn.
Continental Gasolene Cars.
One 4-cylinder touring car, one 4-cylinder roadster, and one 4-cylinder Victoria.

Colt Runabout Co., New York City.
Colt Gasolene Cars.
One 6-cylinder chassis and one 6-cylinder racing runabout.

Chadwick Engineering Works, Phila., Pa.
Chadwick Great Six Gasolene Cars.
One 6-cylinder chassis, one 6-cylinder roadster, and one 6-cylinder touring car.

Dayton Motor Car Co., Dayton, Ohio.
Stoddard-Dayton Gasolene Cars.
One 4-cylinder chassis, one 6-cylinder chassis, two 4-cylinder roadsters, one 4-cylinder touring car, one 6-cylinder touring car, one 4-cylinder limousine, one 4-cylinder taxicab, and one 4 cylinder doctor's carriage.

Dragon Auto Co., Philadelphia, Pa.
Dragon Gasolene Cars.
One 4-cylinder roadster, one 4-cylinder touring car, and one 4 cylinder model engine.

De Luxe Motor Car Co., Detroit, Mich.
De Luxe Gasolene Cars.
One 4-cylinder chassis and two 4-cylinder touring cars.

Dorris Motor Car Co., St. Louis, Mo.
Dorris Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder touring car, one 4-cylinder limousine, and one 4-cylinder roadster.

Eagle Motor Co., Middletown, Conn.
Compound Gasolene Cars.
One 3-cylinder chassis, one 3-cylinder runabout, and one 3-cylinder touring car.

J. M. Ellsworth, New York City.
Ellsworth Gasolene Cars.
One 4-cylinder chassis and one brougham body.

Ford Motor Co., Detroit, Mich.
Ford Gasolene Cars.
Two 4 cylinder runabouts, one 6-cylinder roadster, and one 6 cylinder touring car.

Grout Bros. Automobile Co., Orange, Mass.
Grout Gasolene Cars.
One 4-cylinder chassis and one 4-cylinder touring car.

Gearless Transmission Co., Rochester, N. Y.
Gearless Gasolene Cars.
One 6-cylinder roadster, one 6-cylinder chassis, one 4-cylinder touring car, one 6-cylinder touring car, and one 6-cylinder model engine.

Gaeth Auto Works, Cleveland, Ohio.
Gaeth Gasolene Cars.
One 4-cylinder chassis and one 4-cylinder touring car.

Garford Motor Car Co., New York City.
Garford Gasolene Cars.
One 4-cylinder chassis, five 4-cylinder limousines, one 4-cylinder roadster and one 4-cylinder touring car.

Hatfield Motor Veh. Co., Miamisburg, Ohio.
Hatfield Gasolene Cars.
One 2-cylinder high wheeled "buggy-about" and one 2-cylinder chassis—both air cooled.

Holsman Auto Co., Chicago, Ill.
Holsman Gasolene Cars.
One 2-cylinder high wheeled buggy runabout and one 2-cylinder high wheeled surrey—all air cooled.

Imperial Motor Car Co., Williamsport, Pa.
Second Imperial Gasolene Cars.
One 4-cylinder chassis and two 4-cylinder roadsters.

Jackson Automobile Co., Jackson, Mich.
Jackson Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder roadster and two 2-cylinder touring cars.

W. H. Kiblinger Co., Auburn, Ind.
Kiblinger Gasolene Cars.
One 2-cylinder chassis, one 2-cylinder high wheeled buggy, and one 2-cylinder model engine—all air cooled.

Klink Motor Car Mfg. Co., Dansville, N. Y.
Klink Gasolene Cars.
One 4-cylinder roadster and one 4-cylinder touring car.

Kissell Motor Car Co., Hartford, Wis.
Kissellkar Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder limousine and one 4-cylinder touring car.

Lane Motor Veh. Co., Poughkeepsie, N. Y.
Lane Steam Cars.
Two steam roadsters and one steam touring car.

Logan Construction Co., Chilicothe, Ohio.
Logan Gasolene Cars.
One 4-cylinder air-cooled chassis, one 4-cylinder air-cooled delivery wagon, and one 4-cylinder water-cooled chassis.

The Lansden Co., Newark, N. J.
Lansden Electric Cars.
Two delivery wagons and one touring car.

Oscar Lear Auto Co., Springfield, Ohio.
Frayer-Miller Gasolene Cars.
One 4-cylinder roadster, two 4-cylinder touring cars, and one 4-cylinder racing runabout—all air cooled.

Rapid Motor Vehicle Co., Pontiac, Mich.
Rapid Gasolene Cars.
One 2-cylinder chassis, one 2-cylinder police patrol, one 2-cylinder 1½-ton truck, one 2-cylinder 16-passenger wagonette, one 2-cylinder 12-passenger sight seeing car, one 2-cylinder 12-passenger bus, one 2-cylinder 1-ton delivery wagon, one 2-cylinder 20 passenger sight seeing car, and one 2-cylinder 12-passenger opera bus.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y.
Maxwell Gasolene Cars.
Two 4-cylinder touring cars, one 4-cylinder limousine, one 4-cylinder roadster, one 4-cylinder chassis, one 2-cylinder chassis, one 2-cylinder touring car, and one 2-cylinder runabout.

Mitchell Motor Car Co., Racine, Wis.
Mitchell Gasolene Cars.
One 4-cylinder runabout, one 4-cylinder limousine, one 4-cylinder roadster and one 4-cylinder touring car.

Mora Motor Car Co., Newark, N. Y.
Mora Gasolene Cars.
Two 4-cylinder roadsters, one 4-cylinder touring car, one 6-cylinder chassis, one 6-cylinder roadster, and one 6-cylinder touring car.

Motor Car Co., Detroit, Mich.
Cartercar Gasolene Cars.
One 2-cylinder chassis and two 2-cylinder touring cars.

Mack Bros. Motor Car Co., Allentown, Pa.
Mack Gasolene Cars.
One 4-cylinder 22-passenger sight seeing car and one 4-cylinder 3-ton truck.

Moon Motor Car Co., St. Louis, Mo.
Moon Gasolene Cars.
One 4-cylinder chassis, two 4-cylinder touring cars, and one 4-cylinder roadster.

Moline Automobile Co., East Moline, Ill.
Moline Gasolene Cars.
One 4-cylinder touring car and one 2-cylinder touring car.

Marion Motor Car Co., Indianapolis, Ind.
Marion Flyer Gasolene Cars.
One 6-cylinder roadster, and two 4-cylinder roadsters.

Nordyke & Marmon Co., Indianapolis, Ind.
Marmon Gasolene Cars.
One 4-cylinder air-cooled chassis, one 4-cylinder air-cooled touring car, one 4-cylinder water-cooled roadster, and one 4-cylinder water-cooled touring car.

National Motor Vehicle Co., Indianapolis, Ind.
National Gasolene Cars.
One 4-cylinder roadster, one 6-cylinder limousine, two 6-cylinder touring cars, one 4-cylinder touring car and one 4-cylinder model engine.

Napier Motor Co. of Amer. Boston, Mass.
American Napier Gasolene Cars.
One 6-cylinder limousine and one 4-cylinder runabout.

Overland Auto Co., Indianapolis, Ind.
Overland Gasolene Cars.
One 4-cylinder chassis and one 4-cylinder roadster.

Pontiac Spring and Wagon Works, Pontiac, Mich.
Pontiac Gasolene Buggy.
One 2-cylinder high wheeled buggy runabout.

Pennsylvania Auto-Motor Co., Bryn Mawr, Pa.
Pennsylvania Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder touring car, and one 4-cylinder roadster.

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Premier Motor Mfg. Co., Indianapolis, Ind.
Premier Gasolene Cars.
Two 4-cylinder touring cars one 4-cylinder roadster, and one 6-cylinder touring car.

J. N. Quinby & Co., Newark, N. J.
Bodies.
One 4-cylinder Panhard touring car, one 4-cylinder Simplex limousine, and one 4-cylinder Simplex roadster.

Reliance Motor Car Co., Detroit, Mich.
Reliance Gasolene Trucks.
One 3-cylinder chassis, one 4-cylinder 5-ton truck and one 2-cylinder 2-ton truck.

Reliable-Dayton Motor Car Co., Chicago, Ill.
Reliable-Dayton (Buggy type) Gasolene Cars.
One 2-cylinder chassis, one 2-cylinder high wheeled buggy runabout, and one 2-cylinder coupe.

Rainier Motor Car Co., New York City.
Rainier Gasolene Cars.
One 4-cylinder chassis, one 4-cylinder touring car, and one 4-cylinder limousine.

Reo Motor Car Co., Lansing, Mich.
Reo Gasolene Cars.
Two 2-cylinder touring cars, one 2-cylinder roadster, one 2-cylinder chassis and one 1-cylinder runabout.

Smith Auto Co., Topeka, Kan.
Great Smith Gasolene Cars.
One 4-cylinder touring car and one 4-cylinder roadster.

Schact Mfg. Co., Cincinnati, Ohio.
Schact Gasolene Cars.
(Buggy Type.)
Three 2-cylinder high wheeled buggy runabouts.

St. Louis Car Co., St. Louis, Mo.
American Mors Gasolene Cars.
One 6-cylinder chassis, two 4-cylinder limousines and one 6-cylinder touring car.

Wayne Auto Co., Detroit, Mich.
Wayne Gasolene Cars.
Two 4-cylinder touring cars, two 4-cylinder roadsters, and one 4-cylinder chassis.

Welch Motor Car Co., Pontiac, Mich.
Welch Gasolene Cars.
One 6-cylinder limousine and one 4-cylinder touring car.

Wayne Works, Richmond, Ind.
Richmond Gasolene Cars.
Two 4-cylinder air-cooled touring cars.

York Motor Car Co., York, Pa.
York Pullman Gasolene Cars.
One 6-cylinder roadster, two 4-cylinder model engines, two 4-cylinder touring cars.

Parts and Accessories.

Acetyvone Co., Niagara Falls, N. Y., first gallery, 147—Carbide and lamps.

Acme Spring Check Co., New York, second gallery—Spring recoil checks.

Aero & Marine Motor Co., Boston, Second gallery—Air and water cooled motors.

Ajax-Grieb Rubber Co., New York City, first gallery, 202—Ajax automobile tires.

Allen Auto Specialty Co., New York City, second gallery, 324—Tires jackets and specialties.

American & British Mfg. Co., Bridgeport, Conn., first gallery, 125—Frames, motors, axles and parts.

American Ball Bearing Co., Cleveland, O., first gallery, 159—Ball bearings.

American Electric Novelty & Mfg. Co., New York City, first gallery, 137—Ever Ready batteries, lamps, and tire specialties.

Ampere Mfg. Co., New York City, second gallery, 337—Batteries and ignition specialties.

Atwater-Kent Mfg. Works, Philadelphia, first gallery, 201—Igniters and timers.

Aurora Automatic Machine Co., Aurora, Ill., first gallery, 192—Thor motors and components.

Autocoil Co., Jersey City, N. J., first gallery, 187—Coils and ignition specialties.

Auto Accessories Mfg. Co., Detroit, Mich., first gallery, 123—Tops, tire jackets and specialties.

Auto Improvement Co., New York City, first gallery, 138—Self-starters and specialties.

Auto Igniter Co., New York City, second gallery, 369—Igniters.

Auto Pump Co., Springville, N. Y., first gallery, 168—Pumps and specialties.

Autolyte Mfg. Co., New York City, second gallery—Lamps, generators, horns, etc.

Automobile Supply Mfg. Co., Brooklyn, N. Y., second gallery, 347—Horns, tubing and brass specialties.

Auto Spring Repairer Co., New York City, second gallery, 375—Spring repair outfits.

Automobile Utilities Co., Boston, Mass., second gallery, 364.

Badger Brass Mfg. Co., New York City and Kenosha, Wis., first gallery, 111.—Solar lamps and acetylene generators.

Baldwin Chain & Mfg. Co., Worcester, Mass., first gallery, 161—Baldwin chains and recoil check.

S. F. Bowser & Co., Fort Wayne, Ind., first gallery, 126—Gasolene and oil storage outfits.

Breeze Carbureter Co., Newark, N. J., first gallery, 183—Breeze carburetters.

J. S. Bretz Co., New York City, second gallery, 355—Ball bearings and high tension magnetos.

Briscoe Mfg. Co., Detroit, Mich., first gallery, 163—Radiators and fittings.

Brooke Automobile Supply Co., New York City, second gallery, 302—Supplies.

Brown-Lipe Gear Co., Syracuse, N. Y., first gallery, 107—Transmissions, differentials and steering gear.

Brownell-Trebert Co., Rochester, N. Y., second gallery, 316—Motors.

Bureau of Tours, Automobile Club of America, second gallery, 376—Model hotel room for tourists.

Byrne, Kingston & Co., Kokomo, Ind., first gallery, 171—Kingston carburetters.

Clover Mfg. Co., New York City, second gallery, 361—Grinding compound.

Coe's Wrench Co., Worcester Mass., first gallery, 135—Wrenches.

Cohn, Frank & Co., second gallery—Specialties.

Columbia Nut & Bolt Co., Inc., Bridgeport, Conn., first gallery, 169—Columbia lock nuts.

Commonwealth Rubber Co., Reading, Mass., second gallery, 344—Tires.

Comptoir d'Innovations Automobiles, Paris, second gallery, 351—Tire inflators and French specialties.

Connecticut Telephone & Electric Co., Meriden, Conn., first gallery, 195—Spark coils, switches and ignition specialties.

Consolidated Optical Co., New York City, second gallery, 365—Goggles.

Continental Caoutchouc Co., New York City, first gallery, 211—Continental tires.

Cowles & Co., New Haven, Conn., first gallery, 201A—Accessories.

Cramp & Sons Ship & Engine Building Co., Philadelphia, first gallery, 162—Bronze castings and automobile parts.

Crown Battery Co., New York, second gallery, 314—Dry cells.

W. Smalley Daniels, Boston, Mass., second gallery, 317—Jacks and pumps.

Dayton Electrical Mfg. Co., Dayton, O., first gallery, 157—Igniters and ignition specialties.

J. E. Demar, New York City, second gallery, 332—Detachable rims.

Diamond Chain & Mfg. Co., Indianapolis, Ind., first gallery, 191—Diamond chains.

Diamond Rubber Co., Akron, O., first gallery, 104—Diamond tires.

Diezeman Shock Absorber Co., Hoboken, N. J., first gallery, 143—Shock absorbers.

Jos. Dixon Crucible Co., Jersey City, N. J., first gallery, 175—Graphite lubricants.

Dow Portable Electric Co., Braintree, Mass., second gallery—Coils, ignition specialties.

C. J. Downing, New York City, second gallery, 301—Supplies.

W. J. Duane & Co., New York City, first gallery, 141—Tops and slip covers.

Eastern Carbon Works, Jersey City, N. J., first gallery, 177—Batteries.

Edmunds & Jones Mfg. Co., Detroit, Mich., first gallery, 184—Lamps and specialties.

Electric Storage Battery Co., Philadelphia, first gallery, 148—Accumulators.

Electrical and Mechanical Development Co., Asbury Park, N. J., first gallery—Transformers and rectifiers.

Elite Mfg. Co., Ashland, O., second gallery, 306—Jacks and pumps.

Empire Auto Tire Co., Trenton, N. J., first gallery, 127—Empire tires.

F. R. V. Auto Parts Co., New York City, second gallery, 325—Shock absorbers.

Firestone Tire & Rubber Co., New York City, first gallery, 166—Firestone tires.

Fisk Rubber Co., Chicopee Falls, Mass., first gallery, 110—Fisk tires.

Gabriel Horn Mfg. Co., Cleveland, O., first gallery, 198—Gabriel horns.

Geiszler Bros., New York City, second gallery, 312—Batteries.

Gemmer Mfg. Co., Detroit, Mich., first gallery, 193—Steering gears and parts.

Gilbert Mfg. Co., New Haven, Conn., first gallery, 153—Tire jackets, lamps, covers and rubber cloth specialties.

C. P. Goerz Optical Co., Rochester, N. Y., second gallery—Lenses.

B. F. Goodrich Co., New York, first gallery, 112—Tires.

Goodyear Tire & Rubber Co., Akron, O., first gallery, 119—Goodyear tires.

G & J Tire Co., Indianapolis, Ind., first gallery, 108—G & J tires.

Gray & Davis, Amesbury, Mass., first gallery, 103—Lamps.

Gray-Hawley Mfg. Co., Detroit, Mich., first gallery, 190—Chime whistles and cut-out mufflers.

C. T. Ham Mfg. Co., Rochester, N. Y., first gallery, 139—Lamps.

Hancock Mfg. Co., Charlotte, Mich., first gallery, 195A—Oilers, tank gauges and fittings.

A. W. Harris Oil Co., Providence, R. I., first gallery, 149—Lubricants.

Hartford Rubber Works Co., Hartford, Conn., first gallery, 101—Hartford tires.

Hartford Suspension Co., New York, City, first gallery, 165—Hartford-Truffault shock absorbers.

Hayes Mfg. Co., Detroit, Mich., first gallery, 140—Fenders and fittings.

Hartford Auto Parts Co., Hartford, Conn., first gallery, 150—Universal joints and automobile parts.

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Heinze Electric Co., Lowell, Mass., first gallery, 144—Coils and ignition equipment.
Herz & Co., New York City, first gallery, 156—Timers, plugs and ignition specialties.
Hess-Bright Mfg. Co., Philadelphia, first gallery, 173—Bearings.
Hicks Speed Indicator Co., Brooklyn, N. Y., second gallery, 333—Speed indicators.
Hill Mfg. Co., Buffalo, N. Y.second gallery, 338—Oilers.
Hotchkin Mfg. Co., Chicago, Ill., first gallery, 132—Anti-jolt device.
Hyatt Roller Bearing Co., Harrison, N. J., first gallery, 116—Bearings.
Hydraulic Pressed Steel Co., Cleveland, second gallery—Pressed steel parts.

Index Speed Indicator Co., Minneapolis, Minn., first gallery, 145—Index speed indicators.
International Auto Horn Mfg. Co,. New York City, second gallery, 310—Horns.
Jeffery-De Witt Co., Newark, N. J., second gallery, 356—Spark plugs.
Isaac G. Johnson & Co., Spuyten Duyvil, N. Y., second gallery, 348—Forgings and castings.
Jones Speedometer Co., New York City, first gallery, 199—Jones speedometers, annunciators, odometers, speed regulators and specialties.

K-W Ignition Co., Cleveland, O., second gallery, 319—K-W magnetos, master vibrators, plugs, and ignition system.
Julius King Optical Co., New York City, second gallery, 336—Goggles.
Kinsey Mfg. Co., Dayton, O., first gallery, 196—Kinwood automobile parts.
Charles L. Klauder, Philadelphia, second gallery, 313—Special leathers.
Kokomo Electric Co., Kokomo, Ind., first gallery, 170—Ignition specialties.
C. H. Koster Co., second gallery—Specialties.
Richard E. Krause, Cleveland, O., second gallery, 350—Carburetters.
Lavalette Co., New York, second gallery, 331—Magnetos.
Leather Tire Goods Co., Newton Upper Falls, Mass., first gallery, 130—Non-skid covers and leather inner tubes.
Light Mfg. & Foundry Co., Pottstown, Pa., first gallery, 178—Automobile parts and castings.
Long Mann Co., Rochester, N. Y., second gallery, 352—Tire tools.
Loring Auto Appliance Co., New York City, second gallery, 328—Speed indicators.
Roger B. McMullen, Chicago, Ill., second gallery, 330—Frames, axles and parts.
Leon Mann Co., New York City, second gallery, 353—Automobile clothing.

Manhattan Screw & Stamping Works, New York City, first gallery, 151—Lamps, horns and tire carriers.
John W. Masury & Sons, Brooklyn, second gallery, 371—Varnishes and colors.
Merchant & Evans, Philadelphia, second gallery, 357—Multiple disc clutches and automobile fittings.
Metal Stamping Co., New York City, second gallery, 307—Radiators.
Michelin Tire Co., Milltown, N. J., first gallery, 129—Michelin tires.
Midgley Mfg. Co., Columbus, O., first gallery, 117—Midgley rims and wheels.
Charles E. Miller, New York City, first gallery, 218—Brampton chains and automobile supplies and accessories of all kinds.
William P. Miller's Sons, Long Island City, second gallery, 325—Lubricants.
Model Mfg. Co., New York City, second gallery, 373—Specialties.
Monogram Crest & Sign Co., New York City, second gallery—Monograms, etc.
Morgan & Wright, Detroit, Mich., first gallery, 158—Morgan & Wright tires.
Morrison, McIntosh & Co., Grinnell, Ia., second gallery, 334—Gloves and gauntlets.

A. R. Mosler, New York City, first gallery, 185—Spark plugs.
Motor Car Specialty Co., Philadelphia, first gallery, 120—Speed indicators and accessories.
Motz Clincher Tire & Rubber Co., New York City, second gallery, 303—Tires.

Nathan Novelty Co., New York City, second gallery, 345—Covers and protectors.
National Battery Co., New York City, second gallery, 322—Batteries.
National Carbon Co., New York City, first gallery, 115—Batteries.
National Sales Corporation, New York City, second gallery, 374—Accessories.
National Surety Co., New York City, main floor, 57—Liability policies.
Newmastic Tire Co., New York City, second gallery, 205—Compound filled tires.
New York Coil Co., New York City, second gallery, 368—Coils.
N. Y. & N. J. Lubricant Co., New York City, first gallery, 164—Lubricants.
N. Y. School of Automobile Engineers, New York City, second gallery, 311—Examples of pupils' work.
N. Y. Sporting Goods Co., New York City, second gallery, 360—Accessories.
Noonan Tool & Machine Works, Rome, N. Y., second gallery, 305—Tools.
Norris Auto Co., Saginaw, Mich., second gallery, 363—Tire protectors.
Norton Co., New York City, second gallery, 343—Grinders and emery supplies.

Oliver Mfg. Co., Chicago, Ill., first gallery, 172—Jacks and accessories.
Pacific Iron Works, Bridgeport, Conn., second gallery, 329—Motors.
Pantasote Co., New York City, first gallery, 142—Top and upholstering material.
Patterson, Gottfried & Hunter, Ltd., New York City, second gallery, 346—Tool outfits and specialties.
Pedersen Mfg. Co., New York City, second gallery—Oilers.
Pennsylvania Rubber Co., Jeanette, Pa., first gallery, 180—Tires.
Perfection Spring Co., Cleveland, O., second gallery, 349—Springs.
Pneu L'Electric Co., New York City, first gallery, 217—Tires.
Post & Lester Co., Hartford, Conn., first gallery, 216—Accessories.
Presto Detachable Rim, Jersey City, N. J., second gallery, 341—Rims.
Prest-O-Lite Co., New York City, first gallery, 155—Gas tanks and tire inflators.

Thomas Prosser & Son, New York, second gallery, 308—Krupp steel.

Raimes Co., New York City, second gallery, 366—Metal polish.
Randall-Faichney Co., Boston, Mass., second gallery, 340—Oil guns.
Rands Mfg. Co., Detroit, Mich., first gallery, 152—Tops and accessories.
Regal Coat Co., New York City, first gallery—Automobile apparel.
Remy Electric Co., Anderson, Ind., first gallery, 167—Magnetos.
Republic Rubber Co., Youngstown, O., first gallery, 124—Tires.
Rose Mfg. Co., Philadelphia, first gallery, 109—Lamps.
Rountree-Stimmel Auto Check, New York City, second gallery, 304—Recoil checks.

J. H. Sager Co., Rochester, N. Y., first gallery, 146—Supplementary springs.
Saxon Lamp Co., New York City, second gallery, 320—Lamps.
Scandinavian Fur & Leather Co., New York City, first gallery, 227—Clothing.
Schwarz Wheel Co., Philadelphia, first gallery, 182—Wheels.
C. A. Shaler Co., Waupun, Wis., second gallery, 339—Electric vulcanizers.
Shelby Steel Tube Co., Pittsburg, Pa., first gallery, 114—Tubing.

R. H. Smith Mfg. Co., Springfield, Mass., first gallery, 154—Springfield motometers.
Spicer Universal Joint Co., Plainfield, N. J., first gallery, 197—Universal joints.
C. F. Splitdorf, New York City, first gallery, 106—Timers, distributors, coils and ignition specialties.
Sprague Umbrella Co., Norwalk, O., first gallery, 194—Tops and wind shields.
Springfield Portable Construction Co., Springfield, Mass., second gallery, 377—Portable automobile houses.
Standard Brake Co., New York City, second gallery, 335—Brakes.
Standard Roller Bearing Co., Philadelphia, first gallery, 200—Bearings.
Standard Welding Co., Cleveland, O., first gallery, 160—Tubing and electrically welded parts.
Stewart & Clark, Chicago, Ill., first gallery, 203—Speed indicators.
Joseph Stokes Rubber Co., Trenton, N. J., first gallery—Hard rubber goods.
C. Stolp, Brooklyn, first gallery—Spring suspensions.
Supplementary Spiral Spring Co., St. Louis, Mo., second gallery, 359—Supplementary springs.
Swinehart Clincher Tire & Rubber Co., Akron, O., first gallery, 188—Tires.

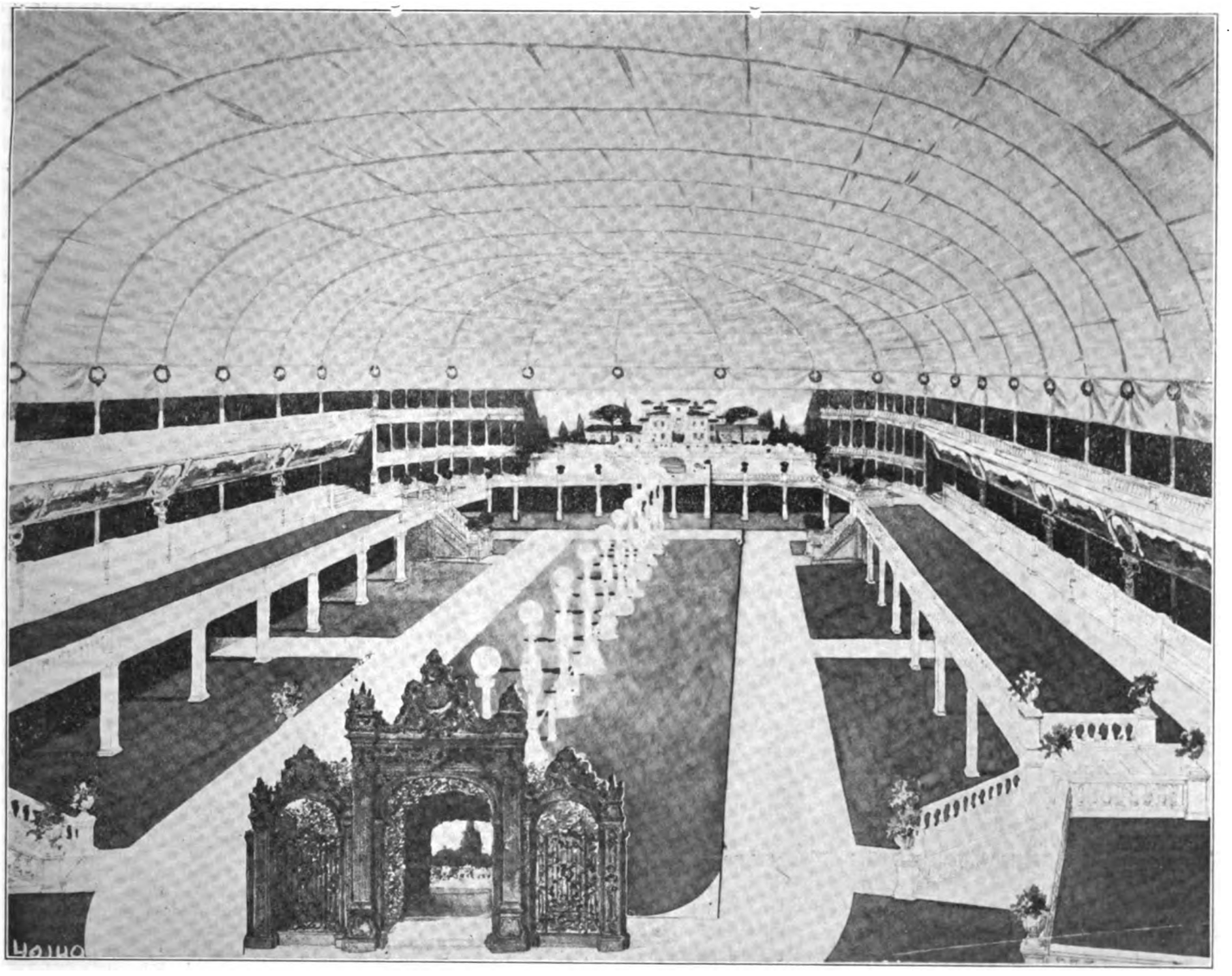
Timken Roller Bearing Axle Co., Canton, O., first gallery, 118—Bearings and axles.
Travelers Insurance Co., Hartford, Conn., main floor, 53—Liability and accident policies.
Traver Blowout Patch Co., New York City, second gallery, 315—Tire repair outfit.
Trenton Rubber Mfg. Co., Trenton, N. J., first gallery—Tires.
Triumph Engineering Co., Brooklyn, N. Y., second gallery, 321—Spark plugs.
Troy Carriage Sunshade Co., Troy, O., second gallery, 358—Tops.
Turner Brass Works, Sycamore, Ill., first gallery, 133—Harroun automobile bumper.

Veeder Mfg. Co., Hartford, Conn., first gallery, 113—Odometers and speed indicators.
Ventilated Cushion & Spring Co., Jackson, Mich., second gallery, 309—Upholstery spring system.
Victor Shock Absorber Co., New York City, second gallery, 354—Shock absorbers.
Visor Knitting Co., second gallery—Woolen neck protectors, caps, etc.

Warner Gear Co., Muncie, Ind., first gallery, 176—Gears and parts.
Warner Instrument Co., Beloit, Wis., first gallery, 179—Warner Auto-meters.
Weed Chain Tire Grip Co., New York City, first gallery, 131—Non-skid chains.
West Side Y. M. C. A. Automobile School, New York City, second gallery, 362—Examples of pupils' work.
Wheeler & Schebler Co., Indianapolis, Ind., first gallery, 174—Carburetters.
Whitlock Coil Pipe Co., Hartford, Conn., first gallery, 102—Radiators and automobile parts.
Whitney Mfg. Co., Hartford, Conn., first gallery, 105—Whitney chains and keying system.
Winchester Speedometer Co., New York City, first gallery, 189—Speed indicators.
Witherbee Igniter Co., New York City, first gallery, 186—Witherbee storage batteries and Wico spark plugs.
William Wooster, New York City, second gallery, 318—Accessories.

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READY NOW FOR THE GARDEN SHOW



How the Garden Will be Transformed for the Show.

There may be other shows and other show buildings, but it is certain that the one which is housed in Madison Square Garden, New York, by virtue of that fact, starts with a tremendous advantage which not even the most embittered rival can gainsay. Not only is it centrally located and close to "dear old" Broadway, but Madison Square Garden was specially designed for exhibition purposes and readily lends itself to effective decoration and display. It was not until three years ago that its full effectiveness for automobile display was realized. Five previous exhibitions of the sort had been held within the superb structure, but then it was that the Association of Licensed Automobile Manufacturers, deciding to flock by itself, secured a lease of the building, and by lavish expenditure so transformed it into a semi-fairyland that a new standard for automobile shows was created; and as in no other structure is it possible to attain that standard, perforce the Garden show stands alone. Not only is the setting far more beautiful than that of any other exhibition, but even the "atmosphere" is different, due partly to the surroundings and in part to the fact that most of the manufacturers who display their cars are the pioneers of the industry and of wide repute.

The eighth automobile show to be held in the Garden will be uncovered Saturday evening next, November 2. It will be the third under the A. L. A. M. auspices and it will be in keeping with its two immediate predecessors.

The color scheme is to be gray and crimson and white. There will be no starry sky overhead, but the girders of the big dome will be screened by a canopy of soft material, rich, warm gray in tone. The exhibition spaces of the main floor and elevated platform will be carpeted with a specially woven fabric of deep crimson, with the visitors' aisles between sharply set off by the gray material. Entering from the foyer, the visitor will be confronted by a towering gateway, a replica of one at the Florio Toresca villa in Florence. Back of the real iron gratings of this gateway, will

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be visible a garden wall with trees and shrubbery behind. While on canvas, this garden will have a literal perspective of seven feet, for the gateway structure has just that much depth. Beyond this entrance piece will extend the main display space, a broad path of rose hue, between the side aisles, with a row of ornamental pillars, fourteen feet in height, crowned by lamp globes extending along the middle. In the distance, at the Fourth avenue end, the vista will be that of Italian villas with terraced gardens of their own. This view will be presented by an immense painting, such as was used last year to mask the tiers of boxes and rear walls.

The plan of having the elevated platform above the arena boxes project slightly over the main floor and of covering the high rear seats so as to make a sort of mezzanine floor, will be repeated, but the idea has been extended and the lines of the Garden are to be further obscured and more space gained by decking over the first balcony, so as to have the flooring extending beyond the balcony railing and overlapping the elevated platform. For the edges of the balcony, the platform and mezzanine floor, special railings have been designed, which, like the lamp and sign pillars, will be finished in pure white. In the general view, these railings of the platform, mezzanine floor and balcony will rise in three rows at the sides and the downward and backward slope from the balcony railing to the supports will be dressed in the gray and crimson. The stairways from the main floor to the platform will be white, with the newel posts supporting ornate urns containing ferns and flowers. The lamp pillars on the main floor and other pillars, twelve foot high, on the platforms, will all bear shields displaying the names of the exhibitors whose space they mark, this being a distinctly new and artistic sign scheme. A few heroic statutes in staff work will adorn the platform.

The same gray and crimson scheme will be found in the cafe and basement, but in the latter place the walls which do not flank exhibits will be picture covered. A rathskeller with novel grotto effect will be located in an out of the way corner of the basement.

In the concert hall, a departure in the decorative scheme is to be made by arranging it as an adjunctory rose garden, set with latticed arbors in green and white. There will be an arched entrance, with lattices of the double diagonal pattern framed in white, a central dividing lattice down the hall, while the walls under the balconies and back of the stage will be finished with the same restful design.

Of late years the Garden shows have been shows of big, impressive cars; runabouts and even big little touring cars have been in a very respectful minority; the one which opens on Saturday will be notable for the increased number of still bigger cars, those of seven-passenger capacity and those with six-cylinder engines, which will then make their first appearance. Pierce and Franklin and Stevens-Duryea exhibited "sixes" last year, and on the forthcoming occasion they will be reinforced by Thomas, Winton and Olds, among others.

Ponderous limousines will be in abundant evidence, of course, but the so-called town car, with a four-cylinder gasolene engine, the short, light car of moderate power and of the landaulet type, will mark its beginning, its chief exponent being the E. R. Thomas Motor Co. and the Knox Automobile Co., although the single-cylinder Cadillac coupe, which is no stranger to show goers, will be there to testify that the town car idea is not wholly new even if it may have been amplified.

Two of the exhibitors will for the first time stage water-cooled models, Corbin and Knox, although this does not imply any diminished regard for their familiar air-cooled cars; it will, however, leave to the Franklin, the distinction of being the only all-air cooled line, and with their daring and radical development and adoption of concentric valves the Franklin exhibit should not lack notice at any time. The Columbia gasolene-electric car, which dispenses with gears and clutches, was shown last year, but it has been redesigned and has gained interest meanwhile and should therefore prove an object of keen attention.

To say nothing of improvements in previous models, such pioneers as Apperson and Haynes each will show an addition to their respective lines—the former one of 30-35 horsepower, the latter one of 45 horsepower. Studebaker also will disclose new gasolene models, while the Pope-Hartford will be presented as a redesigned car and not to remark mechanical improvements, the Pope-Toledo and the Cadillac, for instance, will be distinguished by new bodies that will somewhat change their familiar appearance. While embodying some few refinements, such cars as the Locomobile and the Packard will have their respective and known and proven quantities as their leading attributes.

In the electric department the greatest diversity of body design and appointment will be found, as usual, and among the commercial electric vehicles will be found the "startler" of the show—a "gas-electric road train," the invention of Alden Sampson, 2d, which will be exhibited by the Alden Sampson Manufacturing Co. The train comprises a tractor and several trailers, each of which carries an electric motor and transmission, in addition to an automatic steering gear, controlled by the operator on the tractor. The current supply for the entire train is developed by a gasolene-electric plant on the tractor, and the general principle of operation is the same as is used in ordinary suburban electric railway service.

For the first time since the A. L. A. M. took control of the Garden show, steam has been permitted to enter. It was limited to one representative and it goes without saying that the solitary representative will be the peerless White—peerless, for while dispute always will exist as to the merits of respective gasolene and electric cars, the world admits the leadership of the White in the steam class. There is no other that is to be mentioned in the same breath with it; and the White, too, will prove a worthy compeer of any car of any sort that may be staged anywhere.

Generally speaking, the show in Grand Central Palace which closed to-night, will have "taken the shine off" the tires and other accessories which will be exhibited at the Garden, but for all of that, the number of accessory manufacturers who were not at the Palace and will be in the Garden is surprisingly large.

The full list of exhibitors, their locations, and the wares they will display, is as follows:

Main Floor.

1. Pope Motor Car Co.—Pope-Toledo cars.
2. Royal Motor Car Co.—Royal tourist cars
3. Buick Motor Co.—Buick cars.
4. Autocar Co.—Autocars.
5. F. B. Stearns Co.—Stearns cars.
6. Elmore Mfg. Co.—Elmore cars.
7. Northern Motor Car Co.—Northern cars.
8. Lozier Motor Co.—Lozier cars.
9. Knox Automobile Co.—Knox cars.
10. Haynes Automobile Co.—Haynes cars.
11. Electric Vehicle Co.—Columbia cars.
12. Apperson Bros.' Automobile Co.—Apperson cars.
13. Locomobile Co. of America—Locomobile cars.
14. Packard Motor Car Co.—Packard cars.
15. Cadillac Motor Car Co.—Cadillac cars.
16. George N. Pierce Co.—Pierce Arrow cars.
17. E. R. Thomas Motor Co.—Thomas cars.
18. H. H. Franklin Mfg. Co.—Franklin cars.
19. Stevens-Duryea Co.—Stevens-Duryea cars.
20. Peerless Motor Car Co.—Peerless cars.
21. Pope Mfg. Co.—Pope-Hartford cars.
22. Olds Motor Works—Oldsmobiles.
23. Winton Motor Carriage Co.—Winton.

Elevated Platform.

24. Waltham Mfg. Co.—Waltham-Orient cars.
25. Matheson Motor Car Co.—Matheson cars.
26. Walter Automobile Co.—Walter cars.
27. Selden Motor Vehicle Co.—Selden cars.
28. Alden Sampson, 2d.
29. The White Co.—White steam cars.
30. Corbin Motor Vehicle Corporation.—Corbin cars.
31. Studebaker Automobile Co.—Studebaker cars.

Exhibition Hall.

32. Babcock Electric Carriage Co.—Babcock electric cars.
33. Studebaker Automobile Co.—Studebaker commercial cars.
34. Rauch & Lang Carriage Co.—R. & L. electric cars.
35. General Vehicle Co.—General electric cars.
36. Pope Motor Car Co.—Pope-Toledo commercial cars.
37. Columbus Buggy Co.—Columbus electric cars.

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38. Electric Vehicle—Columbia commercial cars.
39. Baker Motor Vehicle Co.—Baker electric cars.

Basement.

41. Knox Automobile Co.—Knox commercial cars.
42. Royal Motor Car Co.—Royal commercial cars.
45. General Vehicle Co.—General electric commercial cars.
46. Northern Motor Co.—Northern commercial cars.
47. Pope Motor Car Co.—Pope-Toledo commercial cars.
48. Packard Motor Car Co.—Packard commercial cars.
49. Studebaker Automobile Co.—Studebaker commercial cars.
50. Alden Sampson, 2d—Crest trucks.
51. Champion Wagon Co.—Champion electric commercial cars.
52. Cadillac Motor Car Co.—Cadillac commercial cars.
53. H. H. Franklin Mfg. Co.—Franklin commercial cars.
54. E. R. Thomas Motor Co.—Thomas commercial cars.
55. Hewitt Motor Co.—Hewitt trucks.

Mezzanine Platform.

56. Diamond Rubber Co., Akron, O.—Diamond tires.
57. C. F. Splitdorf, New York City—Ignition specialties.
58. Goodyear Tire and Rubber Co., Akron, O.—Goodyear tires.
59. Shelby Steel Tube Co., Pittsburg—Tubing.
60. Dayton Electrical Mfg. Co., Dayton, O.—Ignition specialties.
61. G & J Tire Co., Indianapolis—G & J tires.
62. Gray & Davis, Amesbury, Mass.—Lamps.
63. Veeder Mfg. Co., Hartford, Conn.—Odometers and speed indicators.
64. R. E. Dietz Co., New York City—Lamps.
65. Atwater-Kent Mfg. Works, Philadelphia—Igniters and timers.
66. Byrne, Kingston Co., Kokomo, Ind.—Kingston carburetters.
67. National Carbon Co., New York City—Batteries.
68. Baldwin Chain and Mfg. Co., Worcester, Mass.—Baldwin chains and recoil check.
69. Brennan Mfg. Co., Syracuse, N. Y.—Brennan motors.
70. N. Y. and N. J. Lubricant Co., New York City—Lubricants.
71. Schwartz Wheel Co., Philadelphia—Wheels.
72. The Autocoil Co., Jersey City, N. J.—Coils and ignition specialties.
73. Hess-Bright Mfg. Co., Philadelphia—Bearings.
74. Webb Mfg. Co., Newark, N. J.—Speed indicators.
75. Swinehart Clincher Tire and Rubber Co., Akron, O.—Swinehart tires.
76. Light Mfg. and Foundry Co., Pottstown, Pa.—Automobile parts and castings.
77. Warner Instrument Co., Beloit, Wis.—Warner Auto-meters.
78. Morgan & Wright, Detroit, Mich.—Morgan & Wright tires.
79. Columbia Nut and Bolt Co., Inc., Bridgeport, Conn.—Columbia lock nuts.
80. Hartford Auto Parts Co., Hartford, Conn.—Universal joints and automobile parts.
81. Cook's Standard Tool Co., Kalamazoo, Mich.—Standard jacks.
82. The Auto Pump Co., Springville, N. Y.—Pumps and specialties.
83. Leather Tire Goods Co., Newton Upper Falls, Mass.—Non-skid covers and leather inner tubes.
84. Duff Mfg. Co., Pittburg, Pa.—Barrett jacks.
85. Precision Appliance Co., Chicago—Hill precision oilers.
86. Stewart & Clark Mfg. Co., Philadelphia—Spark plugs.
88. Chandler Co., Springfield, Mass.—Name plates.
89. Globe Machine & Stamping Co., Cleveland—Metal stampings.
90. Kilgore Mfg. Co., Old Town, Me.—Pneumatic shock eliminators.
91. Firestone Tire & Rubber Co., New York City—Firestone tires.
92. Oliver Mfg. Co., Chicago—Jacks and accessories.
93. Hartford Suspension Co., New York City—Hartford-Truffault shock absorbers.
94. Phineas Jones & Co., Newark, N. J.—Wheels.
95. Jones Speedometer Co., New York City—Jones speedometers, annunciators, odometers, speed regulators and specialties.
96. Pennsylvania Rubber Co., Jeanette, Pa.—Tires.
97. Motsinger Device Mfg. Co., Pendleton, Ind.—Motsinger automobile sparker.
98. Timken Roller Bearing Axle Co., Canton, O.—Bearings and axles.
99. Warner Gear Co., Muncie, Ind.—Gears and parts.
100. Remy Electric Co., Anderson, Ind.—Magnetos.
101. The Manufacturers Foundry Co., Waterbury, Conn.—Castings.
102. Brown-Lipe Gear Co., Syracuse, N. Y.—Transmissions, differentials and steering gears.
103. Pittsfield Spark Coil Co., Pittsfield, Mass.—Ignition specialties.
104. Whitney Mfg. Co., Hartford, Conn.—Whitney chains and keying system.
105. Standard Welding Co., Cleveland—Tubing and electrically welded parts.
106. American Ball Bearing Co., Cleveland—Ball bearings.
107. Badger Brass Mfg. Co., New York City—Solar lamps and acetylene generators.
108. Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires.
109. Hyatt Roller Bearing Co., Harrison, N. J.—Bearings.
110. Whitlock Coal Pipe Co., Hartford, Conn.—Radiators and automobile parts.
111. Rose Mfg. Co., Philadelphia—Lamps.
112. Midgley Mfg. Co., Columbus, O.—Midgley rims and wheels.
113. Hartford Rubber Works Co., Hartford, Conn.—Hartford tires.
114. B. F. Goodrich Co., New York City—Tires.

Balcony.

115. Witherbee Igniter Co., New York City—Witherbee storage batteries and Wico spark plugs.
116. Joseph Dixon Crucible Co., Jersey City, N. J.—Graphite lubricants.
117. Valentine & Co., New York City—Varnishes.
118. Eastern Carbon Works, Jersey City, N. J.—Batteries.
119. A. R. Mosler & Co., New York City—Spark plugs.
120. R. E. Hardy Co., New York City—Sta-Rite spark plugs and ignition specialties.
121. F. H. Wheeler, Indianapolis, Ind.—Schebler carburetters.
122. O. W. Young, Newark, N. J.—Oils and lubricants.
123. National Battery Co., New York City—Batteries.
124. Edmunds & Jones Mfg. Co., Detroit, Mich.—Lamps and specialties.
125. Gilbert Mfg. Co., New Haven, Conn.—Tire jackets, lamps, covers and rubber cloth specialties.
126. Uncas Specialty Co., New York City—Specialties.
127. Bethlehem Steel Co., Bethlehem, Pa.—Drop forgings, parts, frames, etc.
128. The Wm. Cramp & Sons Ship and Engine Building Co., Philadelphia—Bronze castings and automobile parts.
129. J. H. Sager Co., Rochester, N. Y.—Supplementary springs.
130. American Electrical Novelty & Mfg. Co., New York City—Ever Ready batteries, lamps and tire specialties.
131. Adam Cook's Sons, New York City—Albany gears.
132. Carpenter Steel Co., New York City—Automobile steels.
133. Republic Rubber Co., Youngstown, O.—Tires.
134. Hotchkin Mfg. Co., Chicago—Anti-jolt device.
135. Gray-Hawley Mfg. Co., Detroit, Mich.—Chime whistles and cut-out mufflers.
136. Weed Chain Tire Grip Co., New York City—Non-skid chains.
137. Winchester Speedometer Co., New York City—Speed indicators.
138. Lipman Mfg. Co., Beloit, Wis.—Speed indicators.
139. Vesta Accumulator Co., Chicago—Batteries.
140. Spicer Universal Joint Mfg. Co., Plainfield, N. J.—Universal joints.
141. Auto Improvement Co., New York City—Self starters and specialties.
142. R. H. Smith Mfg. Co., Springfield, Mass.—Springfield motometers.
143. Herz & Co., New York City—Timers, plugs and ignition specialties.
144. McCord & Co., Chicago—Lubricators, radiators, carburetters, spark plugs and wire belting.
145. Index Speed Indicator Co., Minneapolis, Minn.—Index speed indicators.
146. Holley Bros. Co., Detroit, Mich.—Carburetters and magnetos.
147. Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel horns.
148. Consolidated Rubber Tire Co., New York City—Tires.
149. William C. Robinson & Sons Co., Brooklyn—Greases and lubricants.
150. Standard Roller Bearing Co., Philadelphia—Bearings.
151. Noera Mfg. Co., Waterbury, Conn.—Pumps, etc.

Concert Hall.

152. Sprague Umbrella Co., Norwalk, O.—Tops and wind shields.
153. Auto Accessories Mfg. Co., Detroit, Mich.—Tops, tire jackets and specialties.
154. American & British Mfg. Co., Bridgeport, Conn.—Frames, motors, axles and parts.
155. Indestructible Steel Wheel Co., Chicago—Steel wheels.
156. S. F. Bowser & Co., Inc., Fort Wayne, Ind.—Gasolene and oil storage outfits.
157. Rands Mfg. Co., Detroit, Mich.—Tops and accessories.
158. Springfield Metal Body Co., Springfield, Mass.—Bodies.
159. Wm. J. Duane Co., New York City—Tops and slip covers.
160. Pantasote Co., New York City—Top and upholstery cover.
161. Prest-O-Lite Co., New York City—Gas tanks and tire inflators.
162. Ajax-Grieb Rubber Co., New York City—Ajax automobile tires.
163. The Sherwin-Williams Co., Newark, N. J.—Paints and varnishes.
164. C. Cowles & Co., New Haven, Conn.—Accessories.
165. Motor Car Specialty Co., Philadelphia—Speed indicators and specialties.
166. Gemmer Mfg. Co., Detroit, Mich.—Steering gears and parts.

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167. Wray Pump & Register Co., Rochester, N. Y.—Tire pumps and registers.
168. Aurora Automatic Machinery Co., Aurora, Ill.—Thor motors and components.
169. Diamond Chain & Mfg. Co., Indianapolis, Ind.—Diamond chains.
170. C. T. Ham Mfg. Co., Rochester, N. Y. —Lamps.
71. Hoffecker Co., Boston, Mass.—Speed indicators.
172. Avery Portable Lighting Co., Milwaukee, Wis.—Gas tanks.
173. Stackpole Battery Co., St. Marys, Pa. —Batteries.
174. Electric Storage Battery Co., Philadelphia—Accumulators.
175. Hancock Mfg. Co., Charlotte, Mich.—Oilers, tank gages and fittings.
176. Muncie Auto Parts Co., Muncie, Ind.—Parts.
177. L. C. Chase & Co., Boston—Top and cover leathers.
178. Coes Wrench Co., Worcester, Mass.—Wrenches.
179. Connecticut Telephone & Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.

Balcony.

180. **Randall-Faichney Co., Boston, Mass.** —Oil guns.
181. Isaac G. Johnson & Co., Spuyten Duyvil, N. Y.—Forgings and castings.
182. Acetyvone Co., Niagara Falls, N. Y.—Carbide and lamps.
183. J. S. Bretz & Co., New York City—Ball bearings and high tension magnetos.
184. Voorhees Rubber Mfg. Co., New York City—Rubber goods.
185. Manhattan Screw & Stamping Works, New York City—Lamps, horns and tire carriers.
186. Westinghouse Machine Co., New York City—Electrical equipments.
187. Breeze Carburetter Co., Newark, N. J. —Breeze carburetters.
188. Rushmore Dynamo Works, Plainfield, N. J.—Lamps.
190. English & Mersick Co., New Haven, Conn.—Automobile hardware.
192. Thomas Prosser & Son, New York City—Krupp steel.

Second Tier Boxes.

193. Charles E. Miller, New York City—Brampton chains and automobile supplies and accessories of all kinds.
194. The A. Z. Co., New York City—Hoods, radiators, tanks, etc.
195. H. A. Allers & Co., New York City—Metal polishes.
196. E. M. Benford.
197. Traver Blowout Patch Co., New York City—Tire repair outfits.
198. John W. Masury & Son., Brooklyn—Varnishes and colors.
200. Antioak Tire Co., New York City—Leather tires.
202. Delta Mfg. Co., Bloomfield, N. J.—Spark plugs.
203. Igniter Appliance Co., Cleveland, O.—Igniter specialties.
204. Waters Mfg. Co., New York City—Exhaust horns.
205.—Jeffrey-Dewitt Co., Newark, N. J.—Spark plugs.
206. C. A. Shaler Co., Waupun, Wis.—Electric vulcanizers.
207. Continental Caoutchouc Co., New York City—Continental tires.

Basement.

208. New York Sporting Goods Co., New York City—Accessories.
209. Michelin Tire Co., Milltown, N. J.—Michelin tires.
210. Merchant & Evans Co., Philadelphia—Multiple disk clutches and automobile fittings.
211. Healy Leather Tire Co., New York City—Tires.
212. Robert Bosch, N. Y., Inc., New York City—Magnetos.
213. Havoline Oil Co., New York City—Lubricants.
215A. Dow Tire Co., New York City—Tires.
215B. American Motor Co., Waltham, Mass. —Motorcycles.
215. Blue Ribbon Auto & Carriage Co., Bridgeport, Conn.—Bodies.
216. Amos Shirley, New York City—Styria motorcycles.
217. Manhattan Auto Top & Body Co., New York City—Bodies, tops and wind shields.
218. Gould Storage Battery Co., New York City—Batteries.
219. P. Rielly & Son, Newark—
220. Lavalette & Co., New York City—Magnetos.
221. Lavalette & Co., Importers—Ignition specialties.
222. Pierson Motor Supply Co., Brooklyn—Supplies.
223. Albert Champion Co., Boston, Mass.—Ignition specialties.
224. **Columbia Lubricants Co., New York City—Lubricants.**
225. Auto Supply Mfg. Co., Brooklyn—Horns, tubing and brass specialties.
226. New Departure Mfg. Co., Bristol, Conn.—Coaster brakes, bells and annular ball bearings.
228. Troy Carriage Sun Shade Co., Troy, O.—Tops.
229. American Aluminum Coating Co., Pittsburg, Pa.—
230. Ventilated Cushion & Spring Co., Jackson, Mich.—Ventilated cushion system.
231. Glaenzer & Co., New York City—Nieuport magnetos.
232. L. J. Mutty Co., Boston, Mass.—Top fabrics.
233. Charles J. Downing, New York City—Supplies.
234. Kalb & Berger Mfg. Co., New York City—
236. Leon Mann, New York City—Automobile clothing.
237. Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles.
238. The Bicycling World Co.
240. G. H. Curtiss Mfg. Co., Hammondsport, N. Y.—Curtiss motorcycles.
241. Light Mfg. & Foundry Co., Pottstown, Pa.—Light motorcycles.
244. Reading Standard Co., Reading, Pa.—R. S. motorcycles.
245. Ovington Motor Co., New York City—F. N. motorcycles.
247. N. S. U. Cycle & Motor Co., New York City—N. S. U. motorcycles.
248. Excelsior Motor & Mfg. Co., Chicago —Excelsior motorcycles.
250. Consolidated Mfg. Co., Toledo, O.—Yale-California motorcycles.
251. Merkel Motor Co., Milwaukee, Wis.—Merkel motorcycles.
253. Livingston Radiator Co., New York City—Radiators.
254. **National Oil Pump & Tank Co.—Dayton, O.—Storage tanks.**
255. S. Smith & Son, Ltd., New York City —Speed indicators.
256. A. W. Harris Oil Co., Providence, R. I.—Lubricants.
257. Hopewell Bros., Cambridge, Mass.—Tire cases.
259. John T. Stanley, New York City—Cleaning compound.
260. Standard Brake Co., New York City—Brakes.
262. Vacuum Oil Co., Rochester, N. Y.—Lubricants.
263. Julius King Optical Co., New York City—Goggles.
264. Patterson, Gottfried & Hunter, Ltd., New York City—Tool outfits and specialties.
265. Empire Auto Tire Co., Trenton, N. J. —Tires.
267. Briscoe Mfg. Co., Detroit, Mich.—Hoods, Tanks, radiators, etc.
268. Heinze Electrical Co., Lowell, Mass.—Coils and ignition equipment.
269. Hicks Speed Indicator Co., Brooklyn—Speed indicators.
270. **Comstock Shock Absorber Co., New York City—Shock absorbers.**
271. Motz Clincher Tire & Rubber Co., New York City—Tires.
272. Post & Lester Co., Hartford, Conn.—Supplies and specialties.
273. Norton Co., New York City—Grinders and emery supplies.
274. Newmastic Tire Co., New York City—Compound filled tires.

Third Tier Boxes.

275. Kitsee Storage Battery Co., Scranton, Pa.—Batteries.
276. Peerless Igniter Mfg. Co., Brooklyn—Ignition specialties.
278. Allen Auto Specialty Co., New York City—Tire jackets and specialties.
279. Turner Brass Works, Sycamore, Ill.—Harroun auto bumper.
280. Geiszler Bros., New York City—Batteries.
286. Automobile Utilities Co., Boston, Mass.—Supplies.
287. Aluminum Solder & Refining Co., New York City—Solder.
288. **Norris Auto Co., Saginaw, Mich.**—Tire protectors.
289. Victor Shock Absorber Co., New York City—Shock absorbers.
291. Loring Auto Appliance Co., New York City—Speed indicators.
292. Empire State Tire Co.—
293. Clover Mfg. Co., New York City—Brunding compound.
294. Perfection Spring Co., Cleveland, O.—Springs.

Depew Causes Santa Rosa to Dream.

Amos Depew, of Sherlock, Wis., wherever that may be, has caused Santa Rosa, Cal., to become excited by threatening to establish an automobile factory there. Amos wants a site of 10 acres, but why he should go so far from dear old Sherlock to obtain it, is not made clear. Lebanon, Ind., also has visions of an automobile factory coming its way, but the identity of the Amos in its case is not disclosed.

East Liberty Changes to Arlington.

Owing to the confusion often resulting from the mixing of the names of the East Liberty Automobile Company and the Liberty Auto Company, Pittsburg, the former has decided to change its title to the Arlington Motor Co. The new garage, rendered necessary by fire some time ago, which is being erected at 5971 Center avenue, will be ready for occupancy next week.

Smalley Plant Bought by Ames.

At the receiver's sale last week, the plant and property of the Smalley Motor Co., Bay City, Mich., the plant was purchased by G. W. Ames for $26,000, and the merchandise by C. A. Eddy for $6,250. The total inventoried value of the assets was $110,000.

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SEE THE LOGICAL
RIM
At the NEW YORK SHOWS



THE

1908 UNIVERSAL MIDGLEY RIM

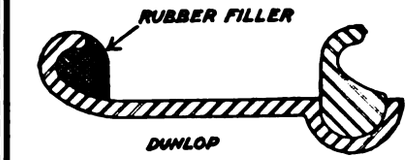
DEMONSTRATIONS
OF THIS THE ONLY TWO PART UNIVERSAL RIM

At the Booths of

MORGAN & WRIGHT
HARTFORD RUBBER WORKS CO.
THE G & J TIRE CO.
THE MIDGLEY MFG. CO.



SOLE MANUFACTURERS
THE MIDGLEY MFG. CO.
COLUMBUS, OHIO



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The Highest Standard of Efficiency Ever Offered In Any Commercial Rnbber Tire At Any Price

Hartford Solid Motor Tires are absolutely protected from rust by the method of fastening them to the rims.

Hartford Solid Motor Tires are fastened in place by longitudinal wires imbedded and vulcanized in the body of the tire itself.

Hartford Solid Motor Tire retaining wires never come in contact with the moisture from the streets—hence

Hartford Solid Motor Tires are absolutely water-proof and are never affected by rust.

Hartford Solid Motor Tires are held in place by compression and in addition are clamped into position by side flanges—hence

Hartford Solid Motor Tires Never creep.

The Hartford Rubber Works Co., Hartford, Conn.

Matheson

THE MATHESON is standardized. The few changes for 1908 are unimportant refinements. As a matter of fact, most of these were incorporated in mid-season, in our '07 cars. This is the Matheson policy. We do not "save up" new features till the beginning of a new selling season. We neither expect nor desire Matheson owners to buy a new car every year, nor every other year. We are building today 1908 Mathesons, 1909, 1910, 1912 Mathesons, and he who invests will have, years hence, a car which will, after the hardest use, be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. A 1906 Matheson stock touring car still holds the world's record for having carried seven passengers a mile in 50⅕ seconds. Most cars are bought:
Matheson cars are invested in.

Write for our new booklet, "I Drove My Matheson—" by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. Better still, visit our exhibit, Space No. 25 in the gallery, at the Madison Square Garden Show. The Matheson sets a standard by which you may judge other high powered cars.

Licensed under Selden Patent **Touring Cars, 50 H. P., $5500** Guaranteed One Year

Palmer & Singer Mfg. Company

1610 Broadway (Formerly Matheson Co. of New York.) **New York**

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TIMKEN PRINCIPLE CORRECT

TIMKEN QUALITY SUPREME

Why is it?

49%

of all the makers that exhibited at The Grand Central Palace are using

Timken Roller Bearings

Not a question of cost surely, for there are others cheaper, so it must be a question of QUALITY, and that's the reason why makers of over **60%** of all High Grade American Automobiles and **95%** of all Trucks made in this country use TIMKEN PRODUCTS

WE WILL EXHIBIT AT

Madison Square Garden Show
New York, November 2-9

Chicago Coliseum & 7th Regiment
Armory Shows in December

THE TIMKEN ROLLER BEARING AXLE CO.

CANTON, OHIO

Eastern Branch—10 E. 31st St., New York.

Western Branch—429 Wabash Ave., Chicago.

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NIBLEAU I.

STAINTON'S NIBLEAU A. K. C. 87094

SENSATIONAL WINNER AND SIRE OF 1906.

The Proven Sire of Prize Winners.

STAINTON'S NIBLEAU II

Winner of the Puppy Class and Novice Class the first time the two classes were ever won by a puppy at the New York Show in the history of the Show. Since then, Nibleau II. has won the Open under 22 lbs., defeating all comers; and also the Open American Bred at Mineola and Brighton Beach Shows.

DOGS AT STUD AND PUPPIES OF ALL AGES FOR SALE

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THE CONSUMMATION OF Commercial Car Building

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LOGAN Motor Trucks

For 1908

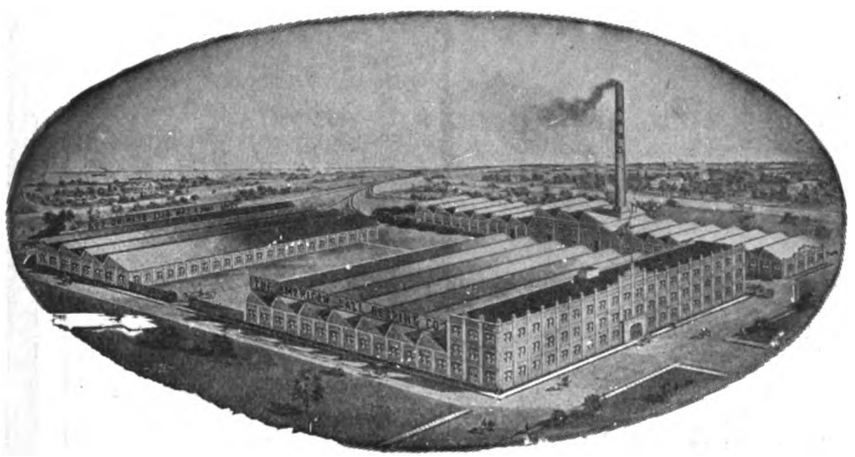
Model T
One Ton

Two Trucks which for strength, simplicity and efficiency are unapproached and unapproachable.

Model S
Three Tons

DON'T FAIL TO SEE THEM AT THE NEW YORK SHOW, SECTION G, GALLERY.

The Logan Construction Co., Chillicothe, Ohio



The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

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CLEVELAND, OHIO, U.S.A.

1908 Locomobile

Combines Proved Reliability With Increased Efficiency and Low Cost of Up-Keep

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The Week's Patents.

863,827. Vehicle Wheel. Joseph Alloatti, Gerzat, France. Filed Jan. 19, 1906. Serial No. 296,840½.

1. In a vehicle, a series of movable pistons arranged in rows transverse to the perimeter of said wheel and forming the tread thereof, means for guiding said pistons, spring means for retaining said guiding means, and elastic means arranged to receive the thrust of said pistons.

863,838. Gas Engine. John G. Ennis, Apponaug, R. I. Filed Dec. 31, 1906. Serial No. 350,197.

1. An explosive engine comprising a cylinder, a piston working therein, a crank shaft operated by said piston, valves for controlling the flow of explosive gases to said cylinder, means for reversing said valves and simultaneously igniting the gases in said cylinder, whereby said engine is caused to run in the opposite direction.

853,848. Automobile Wheel. Adolph Heldman, New York, N. Y. Filed Sept. 19, 1906. Serial No. 335,217.

1. In a wheel the combination of a main rim and auxiliary rim adapted to fit around the main rim and arranged to carry a tire, both rims being tapered toward the wheel's axis, fasteners arranged to straddle the main rim and to embrace the auxiliary rim, and means for holding said fasteners.

863,864. Friction Clutch. Albert Master. Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,555.

1. A friction clutch comprising a member having a series of axially extending guide grooves or ways, a circular series of friction blocks having lugs engaging and sliding in said grooves or ways, said blocks being independently shiftable in axial direction upon said clutch member and a second clutch member comprising a pair of oppositely disposed jaws and means for shifting said jaws to grip said friction blocks, substantially as described.

than D. Maxwell, Tarrytown, N. Y., assignor to Maxwell Briscoe Motor Company, North Tarrytown, N. Y., a Corporation of New York. Filed Dec. 31, 1904. Serial No. 239,160.

1. Power transmitting and controlling mechanism for automobiles and the like, comprising a gear case having a plurality of chambers; an engine having a driving crankshaft and connecting rods in one of said chambers, and a clutch device, speed changing devices and a driven shaft in another of said chambers, substantially as described.

864,016. Clutch and Drum. Jonathan D. Maxwell, Tarrytown, N. Y., assignor to Maxwell-Briscoe Motor Company, North Tarrytown, N. Y., a Corporation of New York. Original application filed Dec. 31. 1904, Serial No. 239,161. Divided and this application filed Sept. 28, 1905. Serial No. 280,450.

1. In a plate clutch for power transmitting apparatus, driving and driven plates alternating in series, means adjustable in an annular field to maintain said plates in operative contact, and a spring wear disc

864,015. Transmission Gearing. Jona- intermediate said means and plates, substantially as described.

864,077. Timer. Harry A. Butler and Franklin C. Peterson, Haverford, Pa. Filed Jan. 27, 1906. Serial No. 298,140.

1. A timer comprising a sliding contact, means tending to press the contact in one direction, and a rotary cam member engaging the contact, said member normally restraining and periodically releasing the contact.

864,089. Wheel for Vehicles. Airry L. Finnell, New York, N. Y. Filed Dec. 30, 1905. Serial No. 294,011.

1. A wheel for vehicles comprising a series of radial spokes secured to a central hub and projecting through a surrounding inner rim and an outer tire rim, and movable spacing blocks between the inner and outer rims said spokes being provided with surrounding springs between the hub and inner rim, substantially as shown and described.

MICHELIN

FRANCE, ENGLAND, ITALY, AMERICA.

The car equipped with Michelin Tires is the car which will be the easiest to sell in 1908. Manufacturers can now afford to equip with Michelins. No more Duty—no more Trans-Atlantic Transportation Charges.

Michelin Tires included in a car's equipment means that the manufacturer is scrupulously careful to give in every way the BEST, the MOST for the customer's money. Michelins will be used on a large number of America's highest priced cars and they will be the standard catalogued equipment of leading cars in other classes.

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The high import duty and heavy trans-Atlantic transportation charges on Michelin tires have been removed through the erection of our American Michelin factory. Its tires are identical in every particular with the products of our factories in France and Italy—the same famous Michelins which have been on the winning cars in the world's greatest races for the last six years and which made their victories possible.

It is the manufacturer's duty to his agents to give them the best selling proposition possible—his duty to the purchaser to give him the greatest possible value for his money. Michelin Tires are the world's standard. A car can hardly hope to be classed as standard that is not standard in every particular of its equipment.

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CLINCHER TYPE	QUICK DETACHABLE TYPE
Round, Flat and Anti-Skid	Round and Anti-Skid
American and Millimeter Sizes	American Sizes only

All the above can be used on any of the well-known Quick Detachable Rims

MICHELIN TIRE CO., Milltown, N. J., U. S A

Better Because Regular

An Oberdorfer Pump never "sticks." It works day in and day out in a uniform manner.
Is yours an Oberdorfer?

M. L. Oberdorfer Brass Co.,
Water St., Syracuse, N. Y.



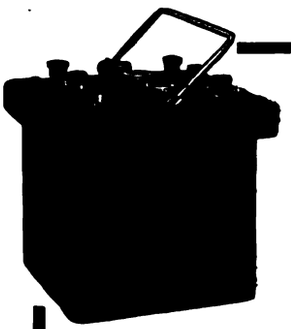
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An Industrious Ignition System

Manufacturers who have "tried out" the

Battery Witherbee

KNOW that its use means new life to the car, means less cost of "up-keep," means perfect ignition.

The Witherbee is not a "drone"—it does not go to sleep or forget.

Write department 20 for catalogue.

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Witherbee Igniter Company

THREE FACTORIES.

New York, 541 W. 43d St. Detroit, 220 Jefferson Ave. Chicago, 1429 Michigan Ave

Baltimore Office: 510 Continental Trust Building.

THE ANNOUNCEMENT OF Columbia Electric and Gasolene Models For 1908

Will be made during the next two weeks. It will be of absorbing interest.

ELECTRIC VEHICLE COMPANY, Hartford, Conn.

Member A. L. A. M.

Garford

A DEFINITION:

TALKING POINTS—Features of mechanical design in which engineering considerations are subordinate to those of advertisement and sale. They are always unnecessary, seldom advantageous and frequently injurious.

"Talking Points" have been shunned in the design of "The Garford." The Garford Company recognizes an "orthodox type." As THE TYPE improves we propose to anticipate, if possible, that improvement. But we will not abandon the fruits of the costly experience of all makers, and claim difference where the claim ought to be conformity to "THE TYPE," and where in the case of the Garford Company it is conformity.

CONFORMITY AT ANY TIME MEANS SUITABILITY

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Garford Motor Car Co. of New York.
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Garford Motor Car Co. of Cleveland,
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CLEVELAND, OHIO



"NIGHT CONTROL"

for visiting automobilists. ¶First-class in every respect. ¶The most attractive grill room in town. ¶Music and good cheer await you. ¶Give it a trial.

FRED S. AVERY, - - - Manager

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SPEED INDICATOR

THE ACME OF PERFECTION



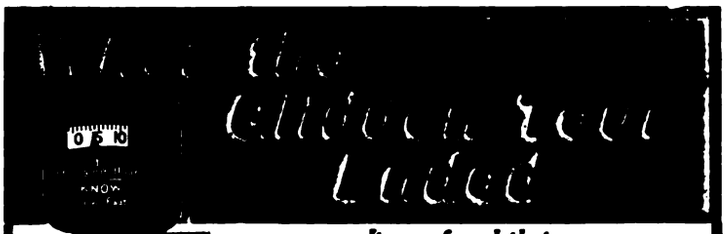
Visit us at the show and let us explain the merits of THE INDEX, if you are not acquainted with them already.

Write for Booklet

INDEX SPEED INDICATOR CO.

FORMERLY
OLIVER INSTRUMENT CO.

MINNEAPOLIS, MINN.





It was found that

3 Out of Every 4 Tourists
had used
Warner Auto-Meters

Yes, sir; of the 48 cars that finished at New York in this year's Glidden Tour, exactly 36 carried Warner Auto-Meters. Just think of that! Three times as many Auto-Meters were used by these experienced motorists as there were of all other speed-and-distance indicators combined!

This sweeping victory for Warner Auto-Meters, followed last year's equally creditable performance in the Glidden Tour, and the recent notable triumphs in the Chicago Sealed Bonnet Contest and the Boston Endurance Race, establish beyond the possibility of a doubt that the Warner Auto-Meter is the only speed-and-distance indicator that can be depended upon to do the work right at all times and under all conditions.

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Warner Auto-Meters are made on the proven-successful magnetic principle. They're just as reliable and durable as a mariner's compass. No matter how rough the road, you can tell at a glance exactly how fast you are going. The arrow never flutters or bobs back and forth. The Warner Auto-Meter is as accurate as a watch.

You ought to have an Auto-Meter on your machine—it doubles the pleasure of autoing, helps you to control your machine and frequently saves embarrassing situations in the police court.

You'll notice the handsome little Auto-Meter on most of the best cars. Take a look at it; inquire about it—nearly all automobile dealers sell Auto-Meters.

Write us the name and power of your car, and we'll tell you just what it will cost you to put an Auto-Meter on the dashboard.

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Agencies in all Principal Cities

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CONTINENTAL

1907 SEAL — MADE IN NEW HAVEN, CONN.

ALL THAT A MOTOR CAR SHOULD BE

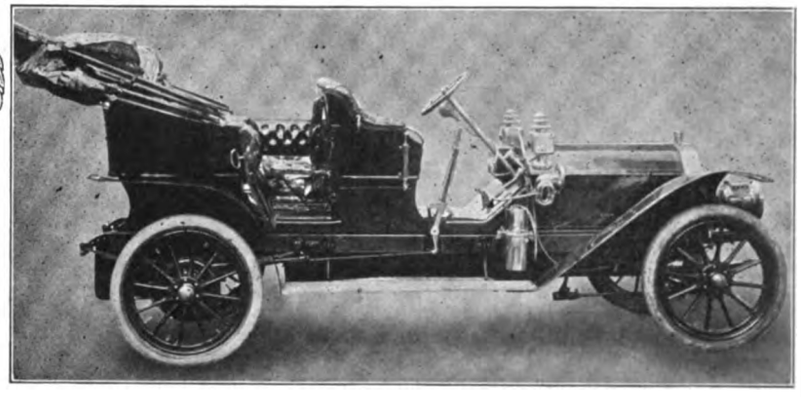
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CAR THAT'S MADE GOOD

Write for agency for unassigned territory; a valuable asset for any dealer.

A Car with a proud record, and glorious future.

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WEAR LONGEST

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AMERICAN MOTOR CAR MANUFACTURERS ASSOCIATION
MOTOR AND ACCESSORIES MANUFACTURERS ASSOCIATION, Incorporated

The members of *all of them* will participate in the

SEVENTH ANNUAL SHOW AT CHICAGO
NOVEMBER 30—DECEMBER 7, 1907

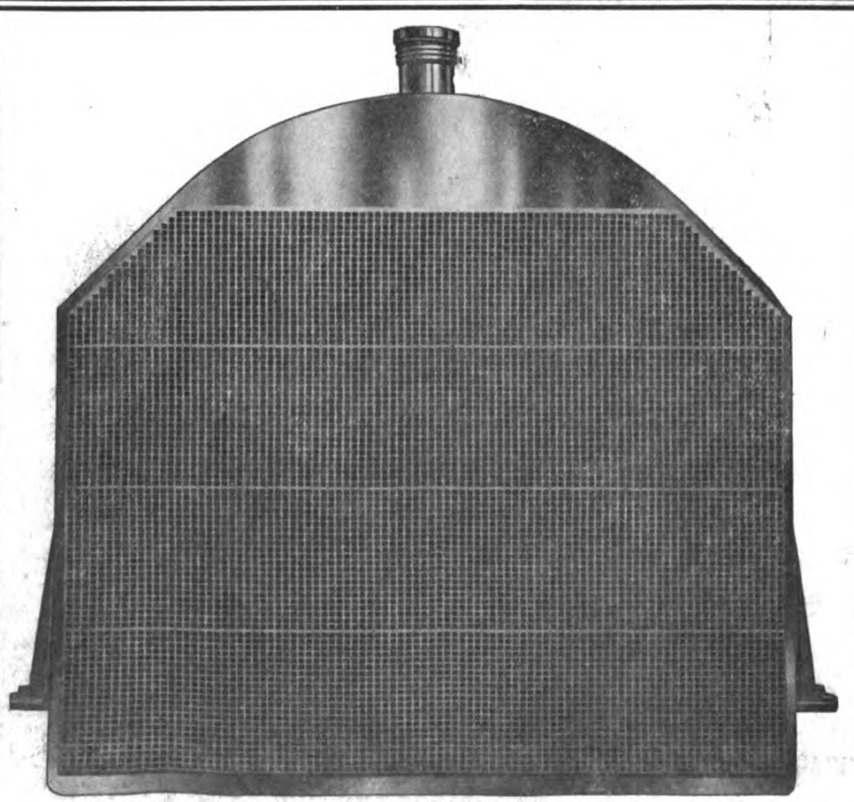
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Three Buildings—Coliseum, First Regiment Armory, Seventh Regiment Armory

The usual courtesies will be extended to visiting dealers from 10 a. m. until noon daily.

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¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

¶ **The Mayo Radiator** is **The Quality Radiator.**

¶ If you are a **Quality Maker** better write us at once.

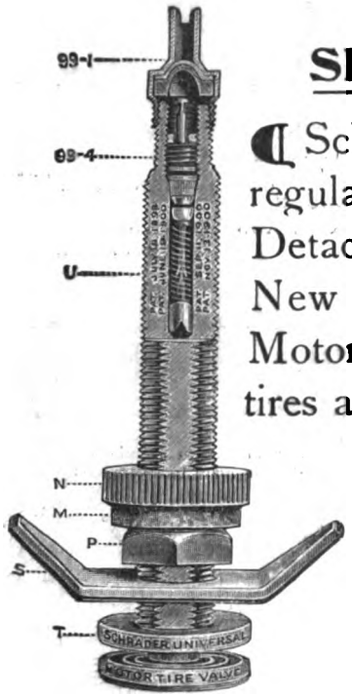
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MAYO RADIATOR COMPANY, New Haven, Conn.

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¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 797 Motor Tire Valve is the standard for 2½-inch and 3-inch tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

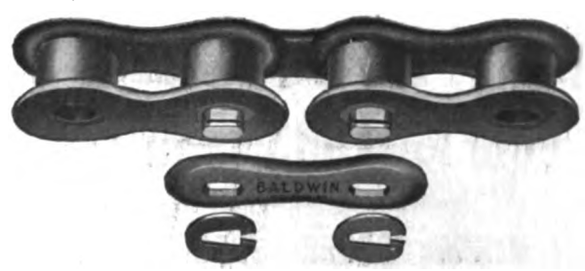
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Improved Detachable



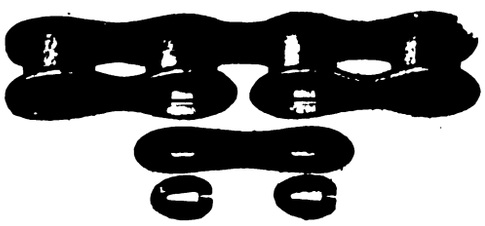
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As Serviceable as a Riveted Chain.

Cannot become detached by accident. Made with accuracy and care of the best selected material. Prices the same as other chain. Made in all sizes.

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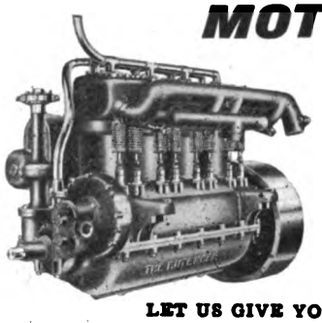
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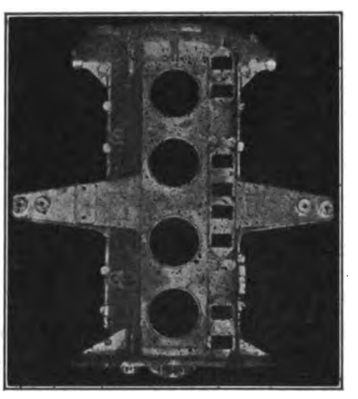
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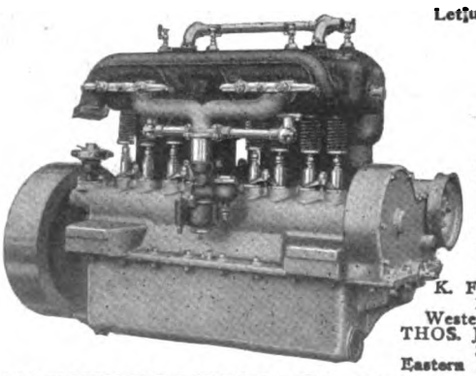
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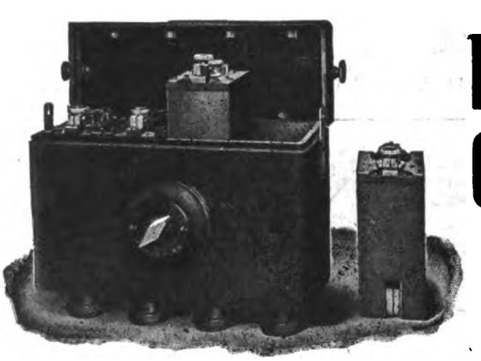
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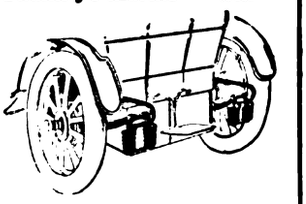
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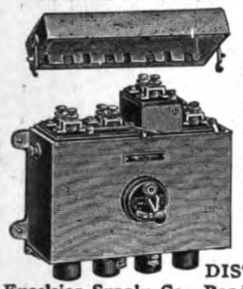
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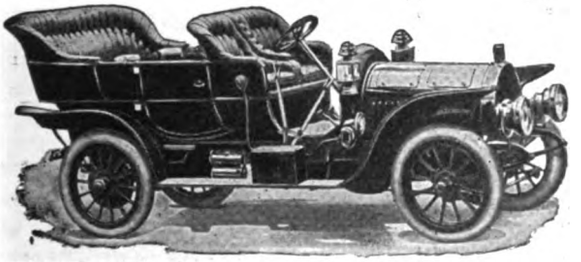
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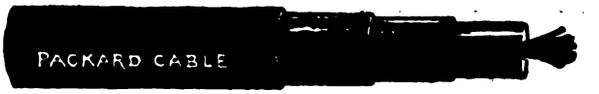
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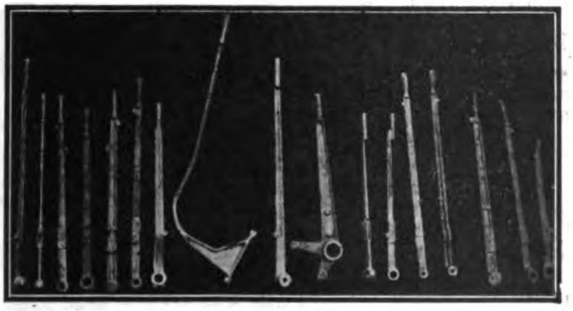


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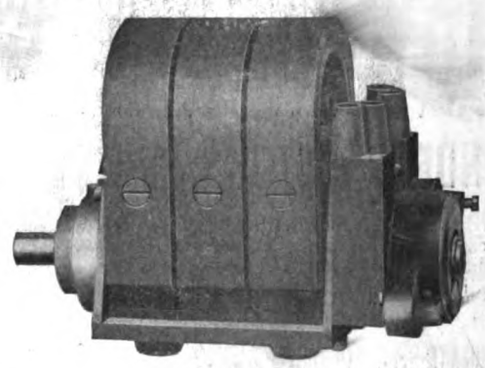
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which have become so well known to the automobile world and which have gained such great favor among their many users, are now being manufactured in the best equipped plant in the world devoted to the exclusive manufacture of Magnetos. This new factory, a model from the standpoint of efficient arrangement and high class equipment, together with perfected designs which are the results of years of experience in this line of manufacture, makes possible the turning out of the very highest grade ignition apparatus on the market.

For 1908 our line includes a new high tension Magneto without coil, which we build in large quantities and are selling at a medium price. It is simple, small and well made. It can be installed with minimum expense and is a high grade equipment in every respect. We also build Magnetos with coils for double ignition, and alternating and direct current Magnetos for all ignition purposes. It will pay you to investigate our Magnetos before deciding upon your ignition equipment for your 1908 cars.

We will exhibit at both New York Shows and the Chicago Show.

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Simple, effective, correctly designed Mahogany finish wood frame, trimmed in brass, 3-16 crystal plates, steel stay rods, bottom of frame shaped to dash of any standard automobile. Can be attached easily and quickly.
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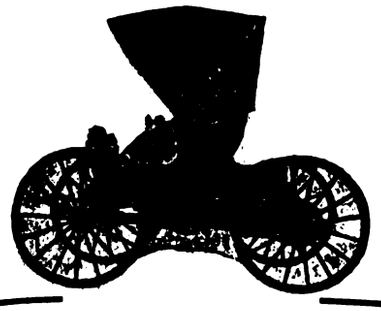
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The Kiblinger Motor Buggy has an air cooled engine and runs equally as well in winter as in summer. No freezing. No punctured tires. This car is built for service, yet it affords all the pleasure there is in motoring at a price that all can afford. Simplicity, durability and reliability are its chief features. Let us send you our agency proposition. It will surely appeal to you.

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The Original Auto-Buggy

Practical, durable, economical and absolutely safe. A light, strong, steel-tired Auto-Buggy. Suitable for city or country use. Speed from 4 to 20 miles an hour. Our 1907 Model has an extra powerful engine, patent ball-bearing wheels; price $275. Also 10 H. P., $400. Rubber Tires, $25 extra. Write for descriptive literature.

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We are always glad to hear from agencies who will push the Wayne in unoccupied territory.

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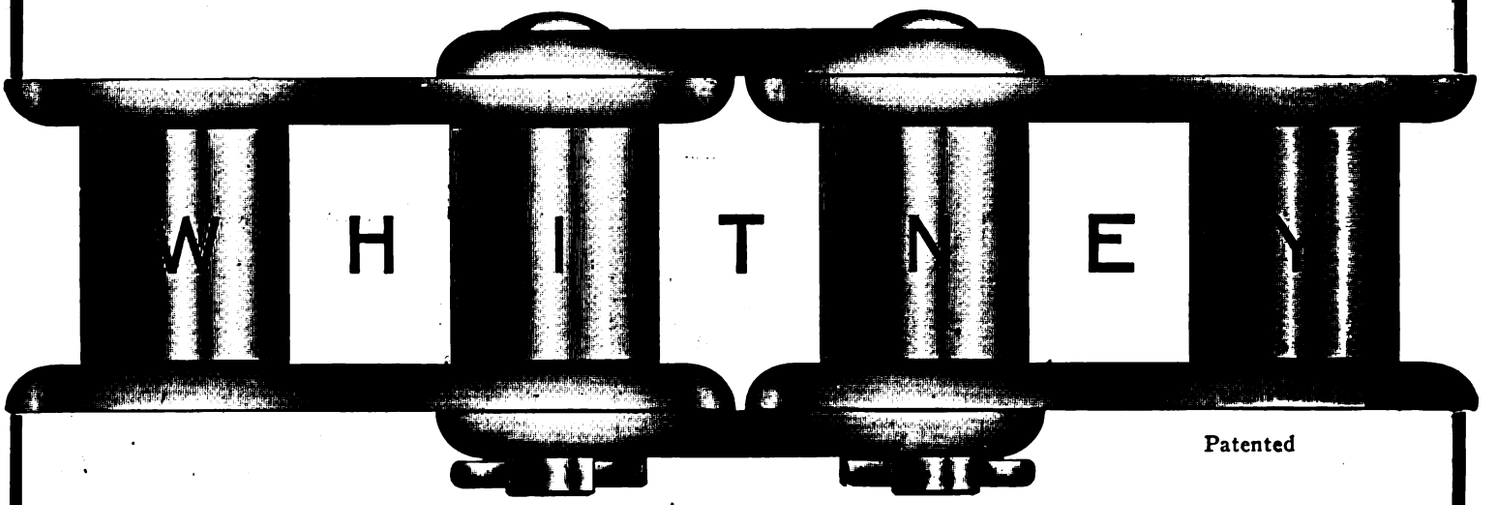
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January 1, 1907 to November, 1, 1907, conditions as follows:

On January 1, 1907, we were renting about 38,000 square feet of floor space in a building not adapted for our growing business. At the same time we were giving much attention to our new buildings which were under construction, and not completed until July, 1907. During this period we moved our entire equipment to our new factory and for a number of weeks were obliged to operate machinery in both plants. We also carried on important experiments and constructed much special apparatus for our new factory. While thus handicapped we could not fully meet the increasing demand for "Whitney" Chains.. Nevertheless, we succeeded in shipping a greater number than ever before for an equal period of time.



Patented

"WHITNEY" CHAINS

November 1, 1907, to December 31, 1908, conditions as follows:

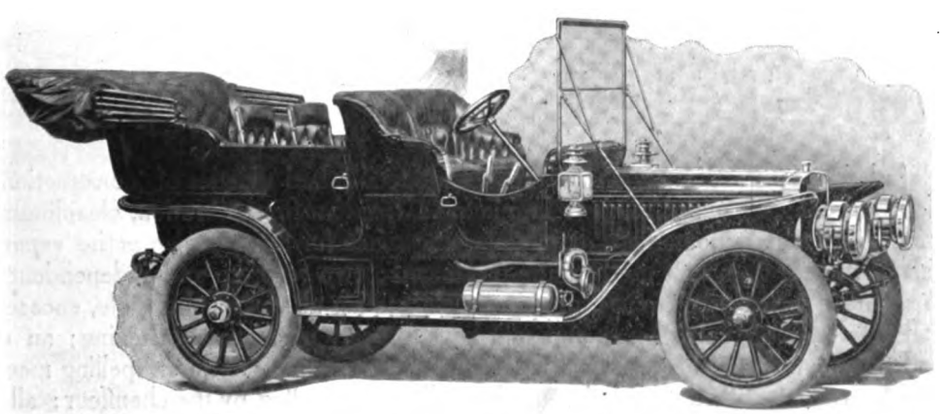
New fire-proof factory, one of the best, strongest and safest in the country. Floor space over 70,000 square feet. Best of light and excellent conditions for employes. Location one of the best in Hartford. Private side-track connecting with main line between New York and Boston. Land area over ten acres. Large increase in new machinery and tools. Improved methods. Inspection system more rigid than ever. Greater accuracy. Increased strength by the use of new materials and improved treatment. Greater durability. Better finish.

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The Winton Six-Teen-Six combines the sweetness of electricity and the flexibility of steam with a greater efficiency of the gasoline motor than is mechanically possible in four-cylinder construction.



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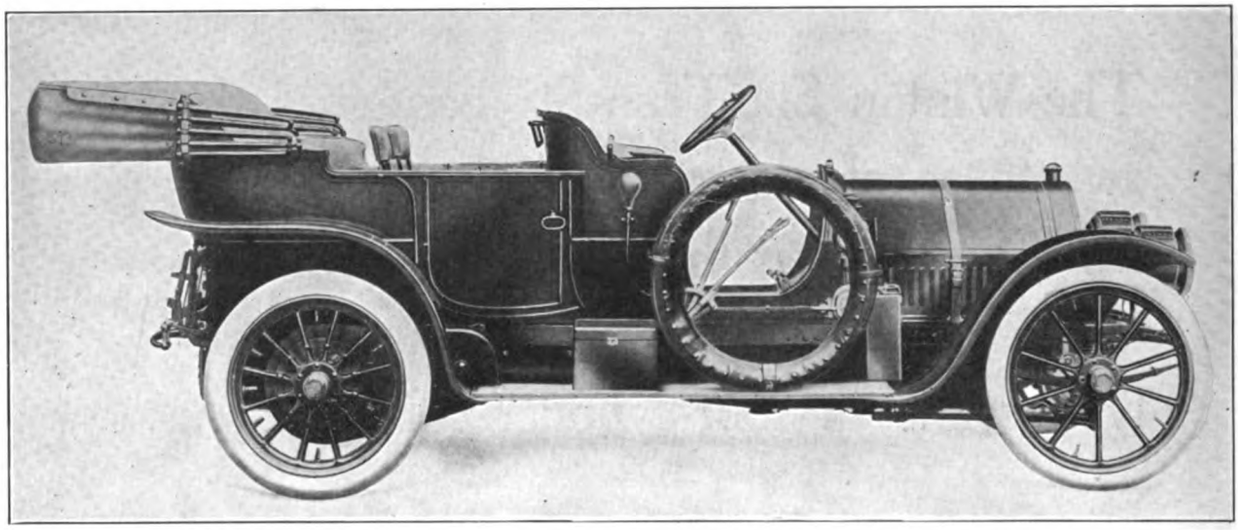
Member A. L. A. M.

NEW YORK	PHILADELPHIA	CHICAGO	SEATTLE
BOSTON	PITTSBURG	DETROIT	SAN FRANCISCO

Of course you know that 1908 will be a Six-cylinder Year

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1908 Announcement



Pope-Toledo Type XVII

Its keynote of design is close attention to those fine details and niceties of construction which enhance the comfort and convenience of the user in quietness, freedom from vibration, cleanliness, speed, luxurious accommodations and appointments, ample carrying space for luggage; an entire separation of the mechanical part of the car from that used by the passengers; two separate and independent systems of ignition on two separate sets of spark plugs, practically eliminating all electrical trouble, encased noiseless Chrome Nickel Steel chains; castled nuts and split keys to every mechanical fastening; an enclosed detachable pan under the whole car to prevent the entrance of dirt or water to the propelling mechanism; an entire absence of brass parts, blued steel being used on all parts handled by the chauffeur; all handles and fittings in that part of the car occupied by the passengers covered with fine seal leather; double extension robe rail, folding detachable seats, dress-suit cases for the ladies' apparel and pockets for the gloves, goggles and other articles.

We take great pleasure in announcing to our dealers and many friends of the Pope-Toledo Car that our new models are

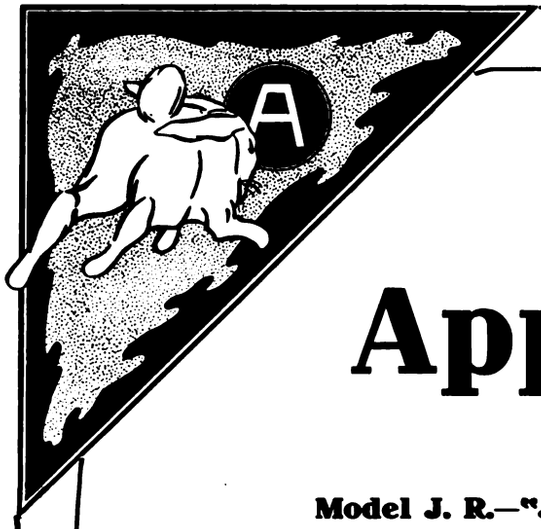
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See our exhibit at Madison Square Garden Show

Pope Motor Car Company

Member A. L. A. M. **Toledo, Ohio**

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THE LINE

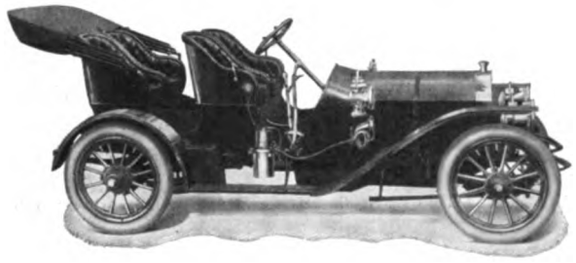
Model J. R.—"Jack Rabbit" Runabout, 50-55 H. P., $5000

Model K—7 Passenger Touring Car, fully equipped, including Top 50-55 H. P., $4200

Model S—7 Passenger Touring Car, fully equipped, including Top SIX-CYLINDER, 50-55 H. P., $5000

The full line is now on exhibition at Space 12,
Madison Square Garden, New York

Model M Roadster



Price $2750

THE NEW MEMBER OF THE APPERSON FAMILY

A medium-priced car is the attraction at the Show.
A car for four passengers, 30-35 H. P. engine (4¾x5 inches) having two independent systems of ignition—i. e. Magneto and Storage Battery.
A car that fully maintains "Apperson Quality."
Dealers in unoccupied territory are invited to call or write us.

In Chicago, Nov. 30 to Dec. 7, we shall exhibit at
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Apperson Bros. Automobile Company

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DIAMOND MOTOR CAR CO., 959 South Main St., Los Angeles, Cal.

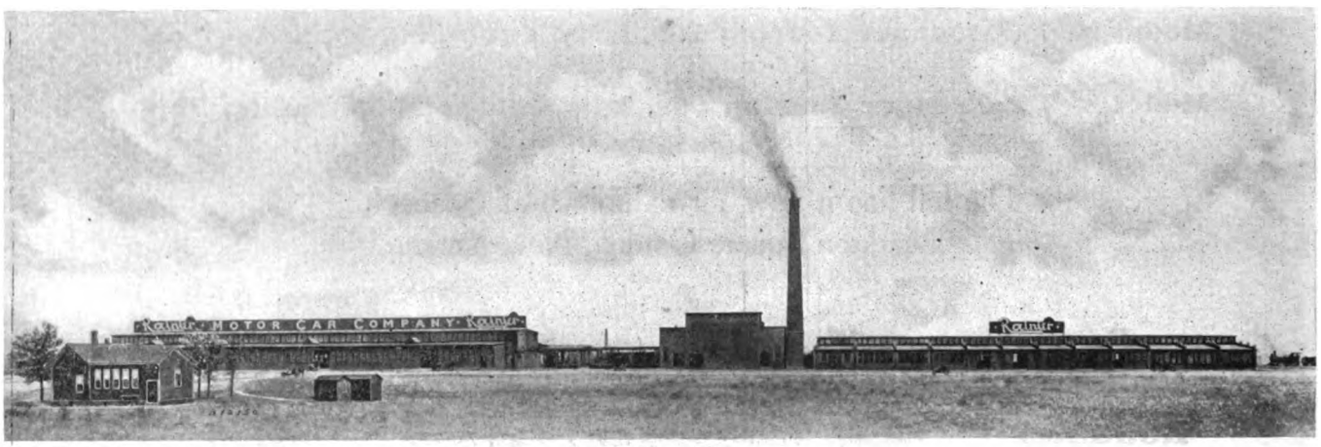


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Rainier

"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



OUR NEW PLANT, FROM WHICH IS COMING THE 1908 "MODEL D," TO ADD TO RAINIER FAME.

SOUND business economy demands that in selling a car under our original and distinctive guarantee, "Free of repairs for one year," that the chief expenditure must be at the beginning, that is, at the factory and, in material and construction, instead of in the local repair shops: Therefore our new factory at Saginaw, Mich.

The new plant comprises sixty acres of ground, with spacious brick buildings, in which every piece of machinery is new and specially designed for building the RAINIER. Nothing has been omitted that would tend to insure accuracy and superlative quality. James G. Heaslet, the original designer of RAINIER cars, is responsible for the 1908 RAINIER, which is higher-powered and more strikingly than ever a "Pullman" in quality and finish. "Quality, not quantity," is our factory watchword, and the 1908 output has been limited to 300 cars.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

CHICAGO BRANCH—1725 Michigan Ave.
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ROCHESTER—Thos. J. Northway, 92 Exchange St.
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CINCINNATI—Auto Motor Car Co., 804 Sycamore St.
LOS ANGELES, CAL.—Smith Bros.
CUBA—C. J. Fiels, Havana.

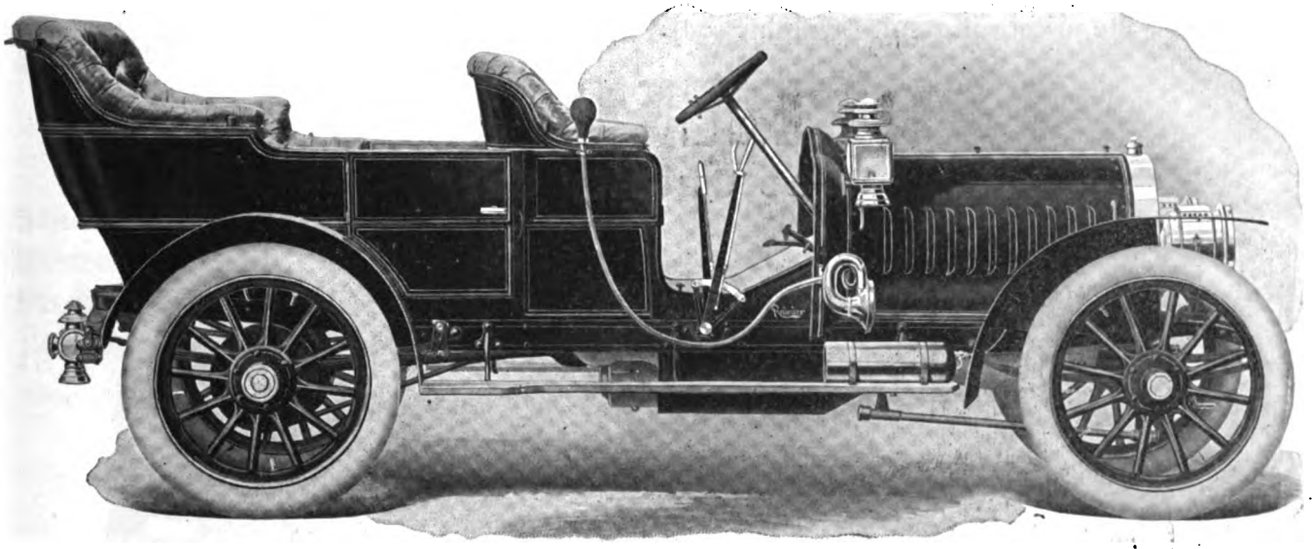
Chicago Automobile Show, November 30th to December 7th

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Rainier

"The Pullman of Motor Cars"

GUARANTEED FREE OF REPAIRS FOR ONE YEAR



1908 "Model D," 45-50 H. P.

SPECIFICATIONS

ENGINE—Rated H. P., 45-50; four cylinders, vertical, cast in pairs; 5-inch bore, by 5¼-inch stroke; cylinders hard gray iron castings, accurately ground to size; pistons light but rigid, ground to fit; valves on opposite sides, mechanically operated, all interchangeable; cams forged integral with shafts; crank shaft nickel steel forging, with bearing surface ground; main engine bearings and connecting rod bearings of finest babbitt metal, enclosed in bronze cases, a construction the same as that in the highest priced imported cars.

IGNITION—Make-and-break system, with Simms-Bosch, low tension magneto, but with a greatly improved and simplified mechanical sparking device, insuring accurate timing and minimum need for adjustment; one upright ignition shaft in place of four.

LUBRICATION—Positive feed mechanical oiler, driven by gear from the cam shaft, provides for engine bearings, magneto and pump shaft; Cylinders and pistons fed by splash system.

CARBURETER—Improved automatic type, having auxiliary air control on dash; feed by gravity flow through trap and screen; Capacity of gasoline tank, 20 gallons, two in reserve.

COOLING SYSTEM—Extra large radiator with fan running mounted on a pedestal over the timing gear case; fan belt runs vertically, driven by a pulley directly on the crank shaft.

CLUTCH—Multiple disc, alternate bronze and steel plates, running in oil; very sensitive touch.

TRANSMISSION—Selective type of gears, four speeds forward and one reverse, direct drive on third speed; shafts and gears nickel steel, and shafts mounted on imported ball bearings; counter shaft located below driving shaft, enabling use of sealed bearings, thereby avoiding oil leakage.

PROPELLER SHAFT—Nickel steel, with new and improved universal joints; driving pinion forged integral with the shaft.

REAR AXLE—Driving axle of floating type, with hubs mounted on tubular axle which carries the weight of the car; drive is bevel gear through clutch driven hubs; driving gear housings manganese bronze, while differential case is drop forging.

BRAKES—Hand and foot brakes, mounted on rear wheel drums, both interior expanding; hand brake pulls towards operator.

FRONT AXLE—Drop forging, manganese steel, I beam section; wheel hubs mounted on imported annular ball bearings.

WHEELS—36-inches with 1¾-inch spokes, second growth, grade A hickory.

TIRES—Rear 36 x 4½-inch, front 36 x 4-inch. Make optional.

FRAME—Pressed nickel steel, with 2½-inch drop forward of rear axle.

CONTROL—Spark and throttle on steering wheel, with stationary segment and foot accelerator pedal.

MUFFLER—Cut-out on all cars.

WHEEL BASE—119 inches.

SPRINGS—Front, semi-elliptic; rear, improved type of platform or three point suspension; size of springs greatly increased; quality of spring steel is most expensive and finest obtainable.

BODY—Double side entrance, seven passenger capacity, full aluminum, ironed for top; extra seats can be folded or removed instantly.

EQUIPMENT—Two acetylene head lights, generator, two oil side lights, oil rear light, large horn, brass coat rail, brass foot rest, tire carriers, trunk rack, tool box on step with full set of tools, including pump, jack and tire repair kit.

WEIGHT—2,850 pounds.

PRICE—$4,500.

RAINIER MOTOR CAR COMPANY

Factory, Saginaw, Mich. **Broadway and 50th Street, New York**

Chicago Automobile Show, November 30th to December 7th

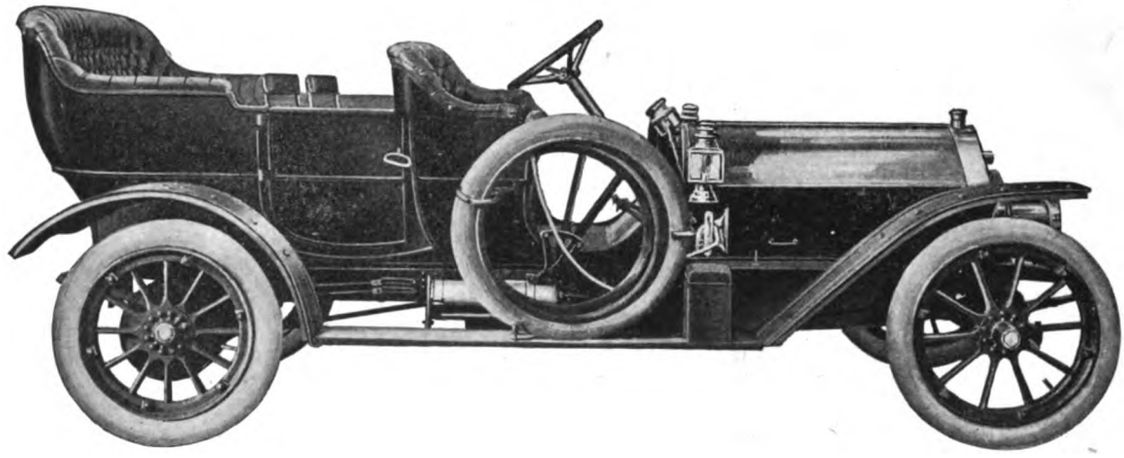
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The Value of a Motor Car

is not determined by its list price, but by its *construction* and *performance*. The 1908 PREMIERS embody structural features not to be found in other cars, and these special features do not savor of freakishness. Their clean, efficient motors with double ignition systems, enclosed multiple disc clutch, large braking surfaces, unusually wide pressed steel frame members, clutch drive rear axle, large roomy bodies, are all features which appeal to those who *know*—the *"motor wise."* We believe that a careful comparison with any other cars relatively the same size and power, without reference to price, will result favorably to the

PREMIER

"The Quality Car"



The PREMIER was awarded perfect score in the 1907 Glidden Tour; in Chicago endurance and sealed bonnet contests; holds world's record for non-stop run—4,906 miles; Boston-New York single and round trip records; Boston-Worcester record, and numerous others.

Model 45—7 passenger touring car; 45-55 horse-power; make-and-break ignition with Bosch low tension magneto and high tension jump spark with storage battery; 124-inch wheel base. Price, $3,750.

Model 30—5 passenger touring car; 4 cylinders, 30-35 horse-power; make-and-break ignition with Bosch low tension magneto and high tension jump spark with storage battery; 108-inch wheel base. Price, $2,600.

Model 24—5 passenger touring car; 4 cylinders, 24-30 horse-power; jump spark ignition, with storage and dry batteries; 108-inch wheel base. Price, $2,250.

Send for Catalogue.

PREMIER MOTOR MFG. CO.

Member A. M. C. M. A. **Indianapolis, Ind.**

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Studebaker

High class, reliable cars built, not to perform occasional "stunts," but to satisfy the buyer under both favorable and unfavorable conditions

THREE GASOLINE MODELS

Studebaker "30," Model A, Touring Car, Speed Car, Limousine, Landaulet
Studebaker "30," Model H, Touring Car, Speed Car, Limousine, Landaulet
Studebaker "40," Model B, Touring Car, Speed Car, Limousine, Landaulet

The design of our Model B, an entirely new car, while adapted to the requirements of a larger car, follows very closely that of our smaller cars, Models A and H

The chassis of all three cars is the Garford, which perhaps more than any other represents the highest attainment of the **orthodox** art. This conviction led to our financial interest in the Garford Company.

Our qualification as experts in the design and equipment of a body is unquestioned. As the manufacture of automobiles is becoming more and more standardized the design of body and the equipment now receives from the prospective buyer more attention than heretofore and the discriminating purchaser should not fail to visit our exhibit at the

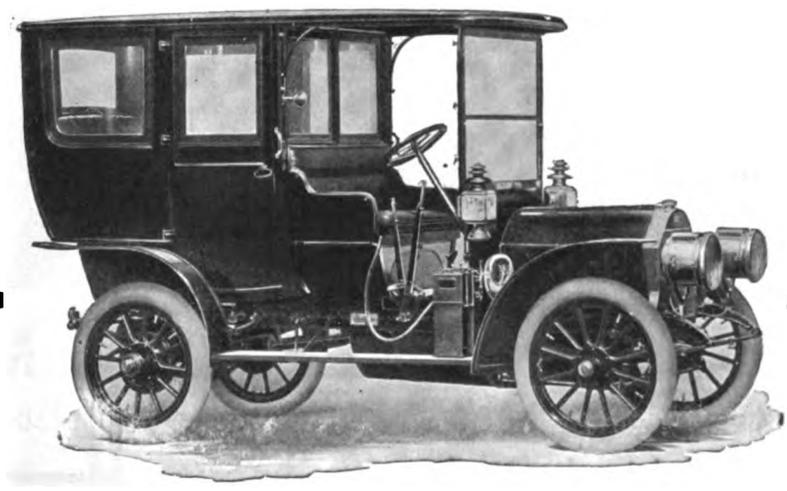
Combined Show in Coliseum, Chicago, Space 3-B

STUDEBAKER AUTOMOBILE CO., South Bend, Ind.

MEMBER ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS

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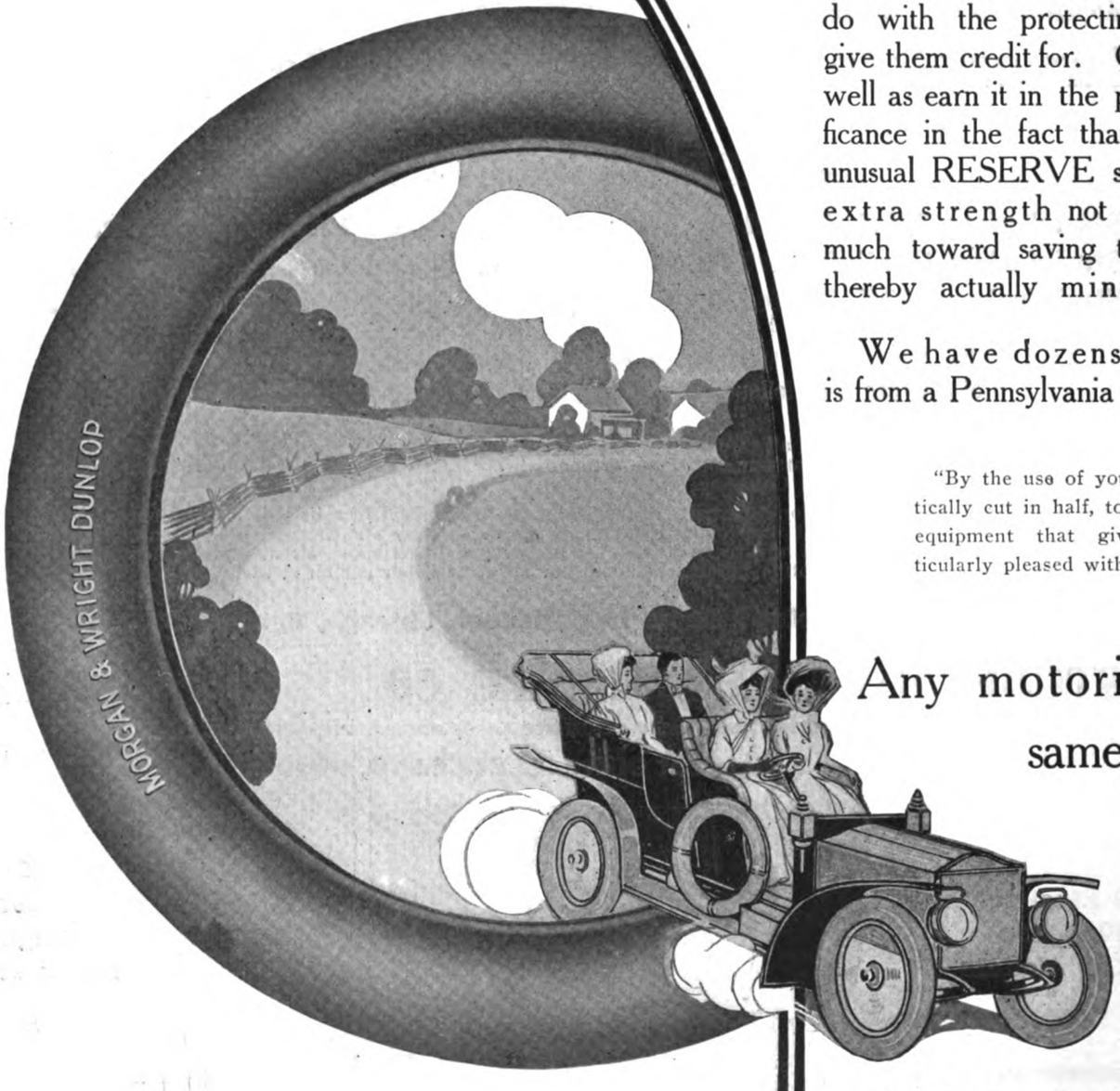
3 Electric Pleasure Car Models



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do with the protecting of other
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equipment that gives no trouble
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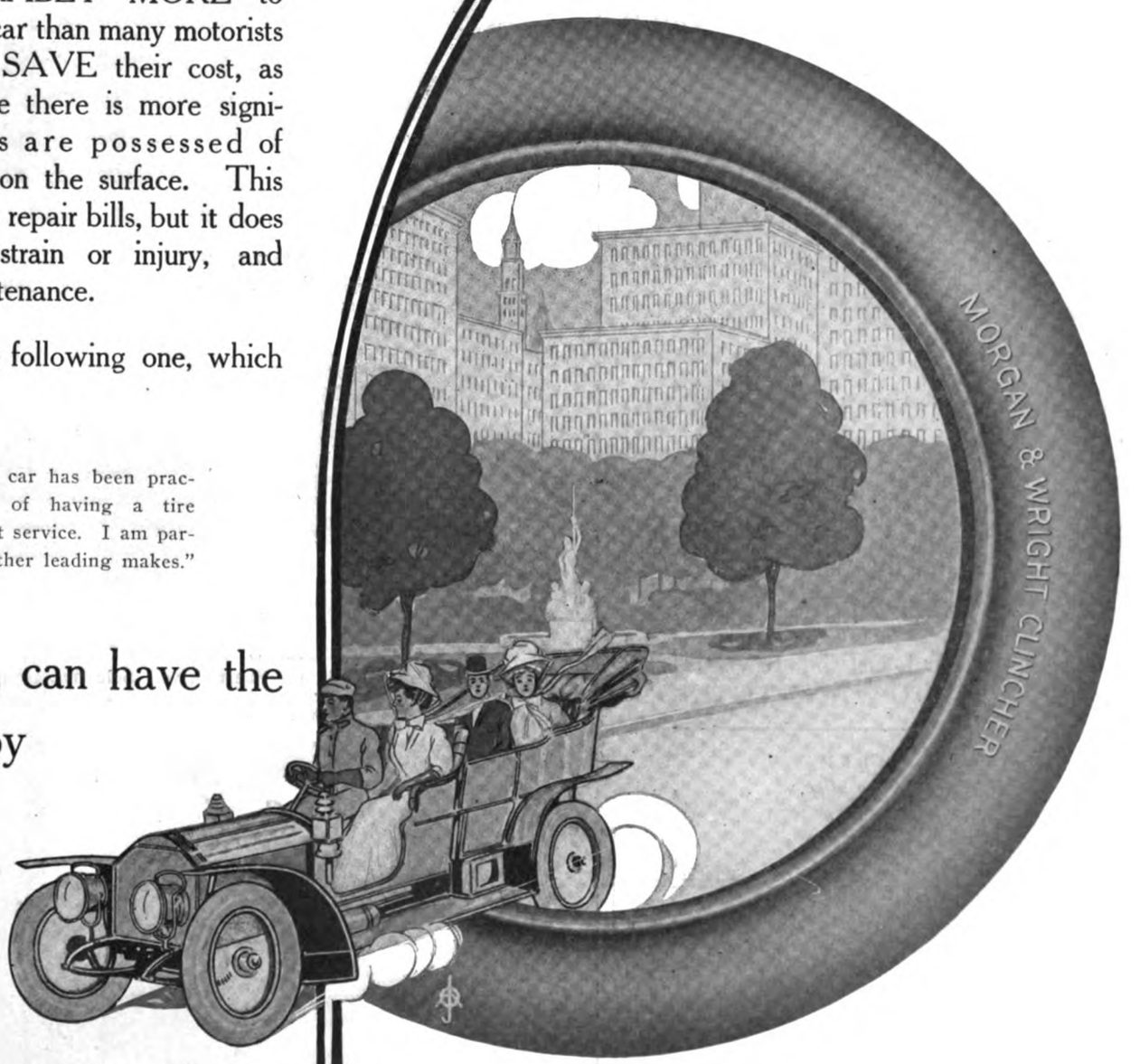
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Tires actually re-
car maintenance

with the economy as well as the
CONSIDERABLY MORE to
parts of the car than many motorists
can and do SAVE their cost, as
give. Hence there is more signi-
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may appear on the surface. This
against costly repair bills, but it does
unnecessary strain or injury, and
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similar to the following one, which

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the satisfaction of having a tire
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service by
the
kind
Tires

WRIGHT, Detroit
DEALERS EVERYWHERE

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JACKSON

More value for the money—not in appearance alone but in VALUE. It's the kind of value that the dealer finds in making profits and the owner finds in splendid service.

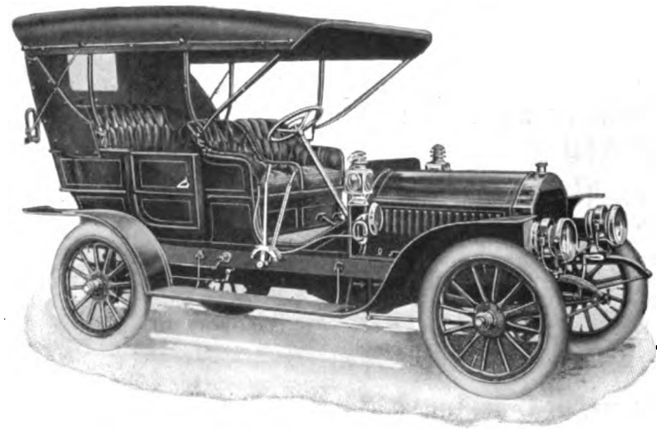
It's not our fault if you overlook opportunities for information concerning the wonderful Jackson line, because we are glad to give you every facility to learn fully just what we are giving.

Consider these three models, for instance.

WRITE US A LETTER ASKING WHATEVER YOU WANT TO KNOW

REMEMBER—
No sand too deep,
No hill too steep—
FOR THE JACKSON

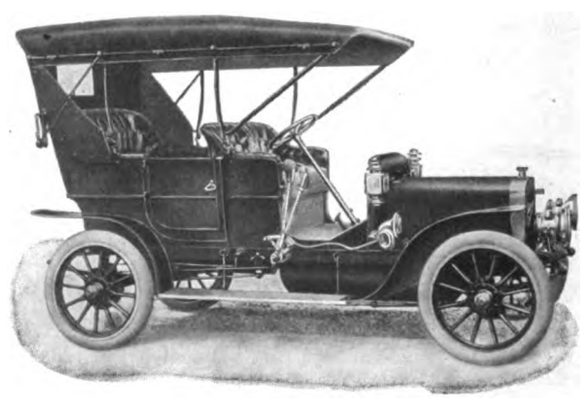
JACKSON AUTOMOBILE COMPANY
JACKSON, MICHIGAN



MODEL E.
Five passenger touring car. 35 h. p. Shaft drive. Selective transmission with 3 speeds. 34-inch wheels. 3½-inch tires. Wheel base 111 inches. Price, $2,000.

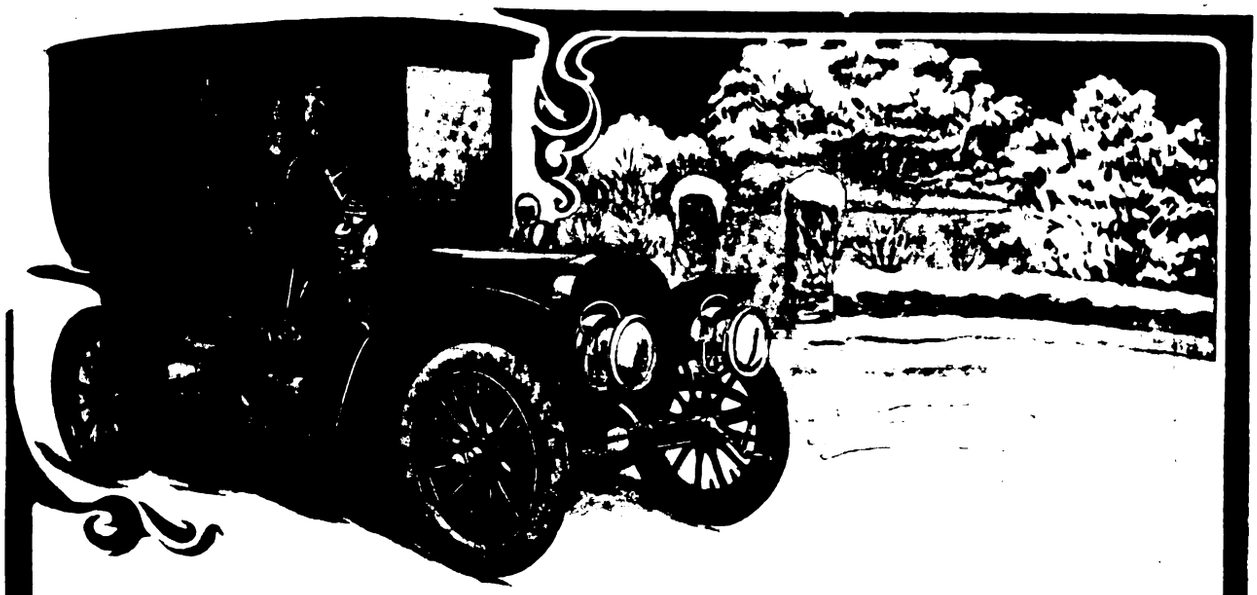


GENTLEMAN'S ROADSTER.
Three passenger, 35 h. p. Shaft drive. Selective transmission with 3 speeds. Wheels 34 inch. Tires 3½-inch. Speed 60 miles per hour. Price, $2,000.



MODEL D.
Two cylinder opposed under the body. Shaft drive. 24 h. p. Selective transmission with 3 speeds. Wheels 32½ inch. Tires 3-inch. Wheel base 106 inches. Price, $1,550.

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ADVANCED IDEAS IN DESIGN

You are going to the Automobile Show to find out what is new in the industry—to keep posted on the latest developments and improvements in motor cars.

As in former years, experts always watch the Haynes exhibits. From the time when Elwood Haynes built the first American gasolene car (now in the Smithsonian Institute) the Haynes has always held the leadership in invention—not in passing freak devices, but in those features such as the magneto, the side entrance, large wheels, aluminum alloy, etc., etc., which have since become permanent features of all cars.

In the present year, the leadership of the Haynes in correct invention is still unchallenged. These are the unique features of the 1908 Haynes which we invite you to examine at the Show:

1. The roller-pinion-and-bevelled-sprocket direct drive. This device replaces the troublesome bevel gears and reduces rear axle strains. It makes shaft drive possible even in our high-powered Model U, and this model is probably the only high-powered car at the Show which does not have those noisy, stretching and mechanically incorrect side-chains.
2. The unique Haynes Master Clutch. This Clutch works like a band brake, metal to metal. It takes up the load smoothly and gently, without jerking. No leather to renew.
3. The Haynes Change-Gear System. This embodies a ratchet and pawl device which makes the burring and stripping of the gears impossible and entirely prevents shock to the mechanism when changing from a high to a lower gear.
4. The Haynes Unbreakable Universal Joints, the wear on which is taken by large flat surfaces instead of light pins.
5. The Roller-Bearing Power Route, all the way from piston stroke to the hub of the road wheel.

The Haynes is made in three models, all embodying the above advanced devices.

Model S, 30 H.P., $2500 Model W, 45 H.P., $3000 Model U, 60 H.P., $3750

For catalogue address Desk D-60

HAYNES AUTOMOBILE COMPANY, KOKOMO, IND.

Oldest Automobile Manufacturers in America - - Members A. L. A. M.

NEW YORK: 1715 Broadway CHICAGO: 1420 Michigan Avenue

HAYNES

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A NEW Columbia 7 Passenger MOTOR CAR With ELECTRIC TRANSMISSION

Electricity is not a prime power agent, yet as a means of transmission and control of power it has supplanted all other methods in steam railroads, street railroads, warships, factories, etc., and in the new high powered 7 passenger gasoline car electricity has supplanted all friction clutch, gear boxes and shifting levers.

Also: the light Columbia touring car, runabout and limousine has many and important improvements for 1908

Electric Vehicle Company

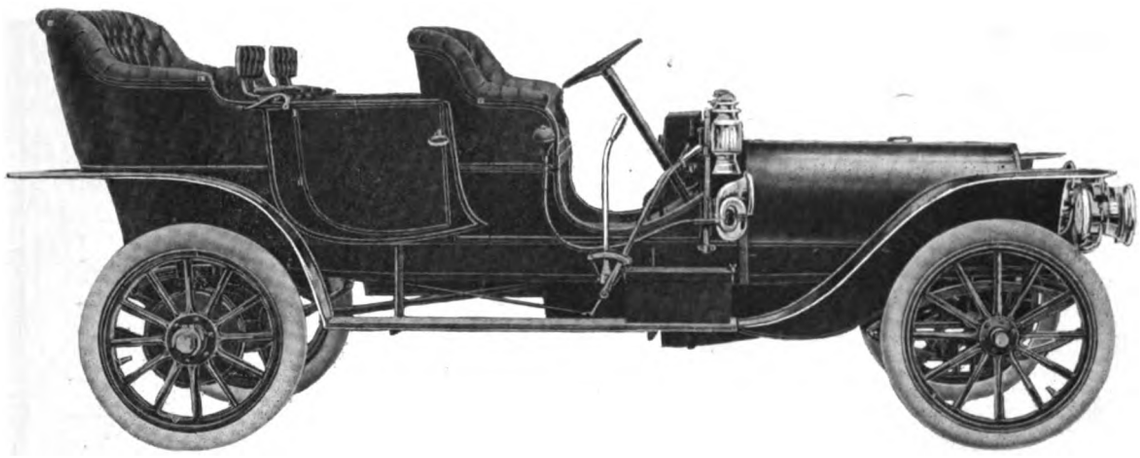
Hartford, Connecticut

New York: 134-136-138 W. 39th Street

Members A. L. A. M.

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Franklin



Six-cylinder Franklin $4000

What's six cylinders for?

More power per weight—means more "do;" more "go."

What a mistake, therefore, to add a ton of weight with the extra two cylinders!

The Franklin six-cylinder weighs only 300 pounds more than the Franklin four-cylinder.

Strong? What other automobile could have stood that 15-day trip from San Francisco to New York?

1908 Franklin Models

16 h. p. Runabout, - - $1750
16 h. p. Touring-car, - $1850
28 h. p. Touring-car or Runabout, $2850
42 h. p. Touring-car or Runabout, $4000
Landaulets and Limousines

Prices f. o. b. Syracuse

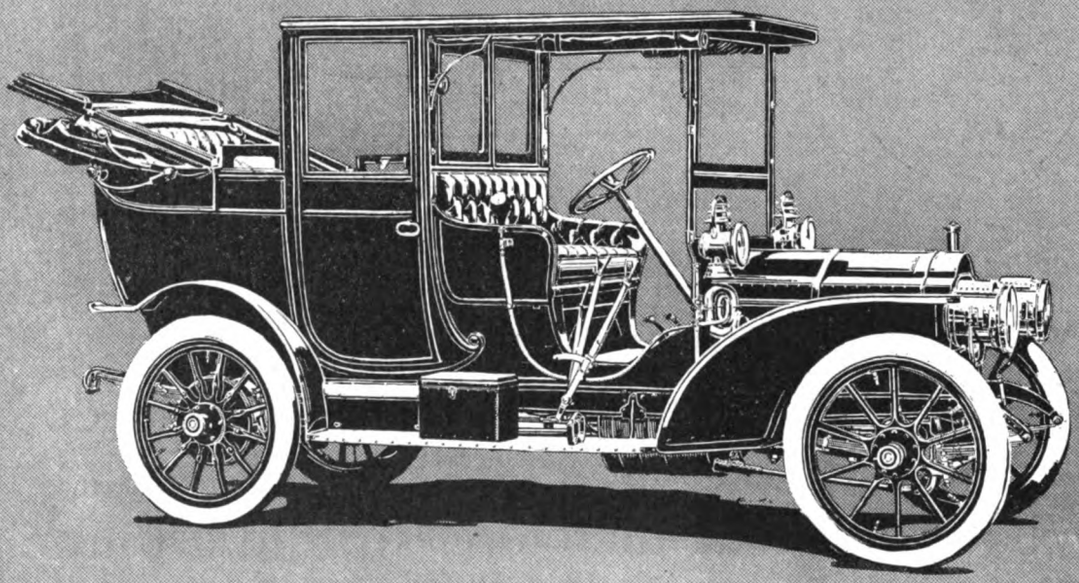
H. H. FRANKLIN MFG. COMPANY, Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers.

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Packard

"THIRTY"
1908



"Ask the man that owns one"

PACKARD MOTOR CAR COMPANY
DETROIT, MICHIGAN

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THOMAS

THE E. R. THOMAS MOTOR CO. presents four styles of chassis and nineteen styles of bodies

Thomas 4-20 Town Car

Combines luxury with utility and necessity; designed particularly for city and suburban use in good or bad weather, for calling and shopping, for the theatre, for social functions and touring on good roads. This car is furnished with brougham, landaulet, cabriolet, limousine and doctor's car bodies. In Europe this style of car is the vogue, as it rapidly is becoming in America. Prices, $3,000 to $3,250.

Thomas 4-40 Detroit

A marvel of smooth and quiet running with a dash in operation and distinctive style in appearance that denotes the thoroughbred and fascinates the most critical. The 4-40 has been strengthened and improved where the wisdom of experience has suggested. It is especially designed to successfully eclipse at a much lower price, shaft driven cars of the highest price and class. It is equipped with runabout, tourabout, touring and limousine bodies. Prices, $2,750 to $3,750.

Thomas 4-60 Flyer

The Old Reliable is smoother, snappier, faster, lighter, quieter and roomier than ever. It has been redesigned and refined until it has become one of the most beautiful and stylish cars to be seen. The mechanical changes are largely refinements, though the motor generates more power. A bearing between each cylinder is still one of its chief characteristics. It is equipped with runabout, tourabout, landaulet and limousine bodies. Prices, $4,500 to $5,700.

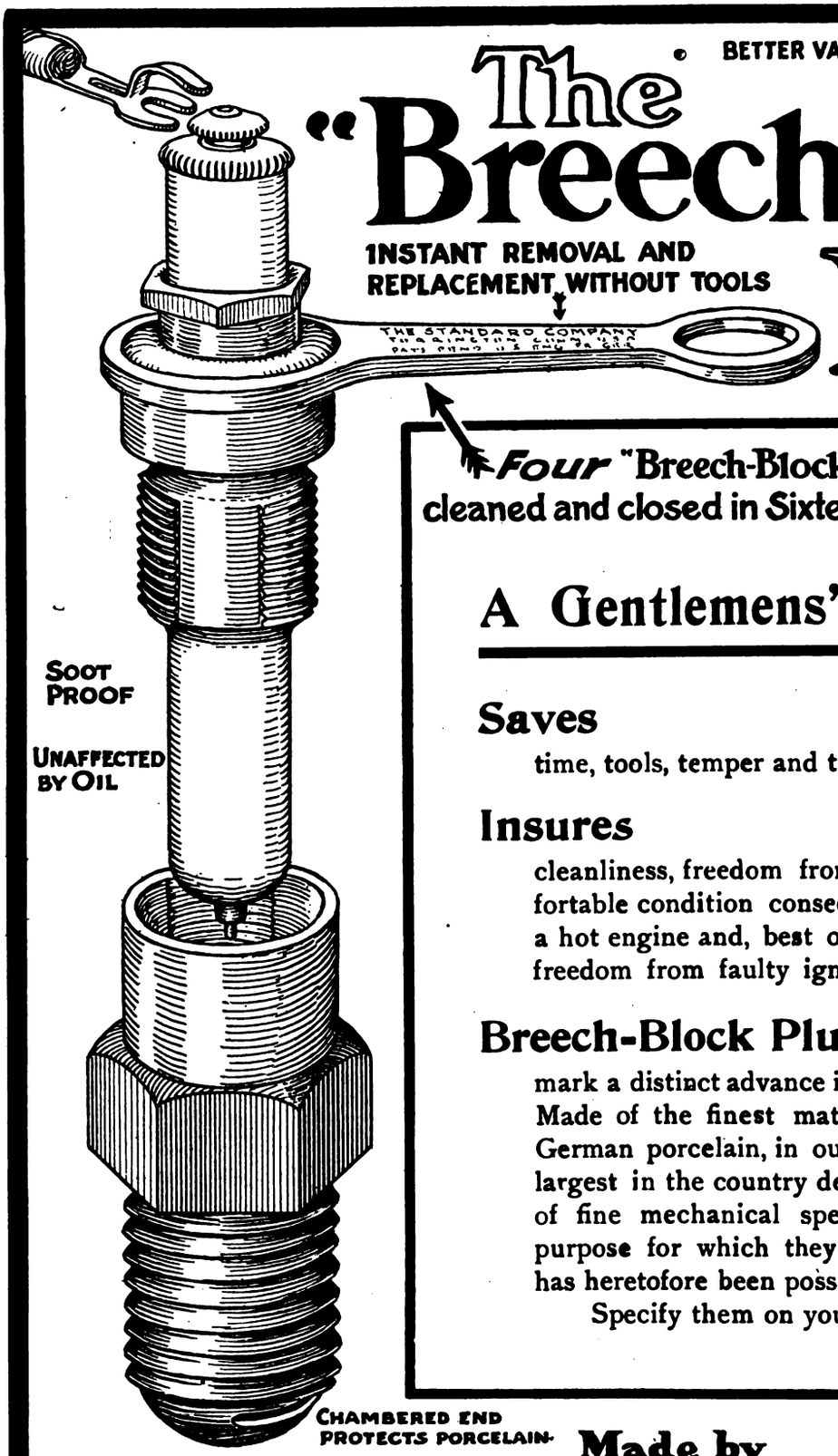
Thomas 6-70 Special

This is the climax of automobile construction, and is one of the most powerful and flexible cars made, retaining as it does, the structural principles that have counted so much for reliability in the Thomas 4-60 Flyer. There is not a single experimental feature in its entire construction. For speed, smooth running on hills and bad roads, and for slow speed, all on the high gear, the 6-70 Special is not equalled. It is equipped with runabout, touring, landaulet and limousine bodies. Prices, $6,000 to $6,900.

E. R. Thomas Motor Co.

Members A. L. A. M. BUFFALO, NEW YORK

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BETTER VALUE THAN ANY OTHER PLUG MADE

The "Breech-Block" Plug

INSTANT REMOVAL AND REPLACEMENT WITHOUT TOOLS

Four "Breech-Block" plugs can be opened, cleaned and closed in Sixteen Seconds by the watch.

A Gentlemens' Spark Plug

Saves

time, tools, temper and trouble;

Insures

cleanliness, freedom from the "fussed-up" uncomfortable condition consequent of working around a hot engine and, best of all, insures comparative freedom from faulty ignition.

Breech-Block Plugs

mark a distinct advance in spark plug construction. Made of the finest materials, including genuine German porcelain, in our own factory (one of the largest in the country devoted to the manufacture of fine mechanical specialties), they fulfill the purpose for which they are designed better than has heretofore been possible.

Specify them on your cars.

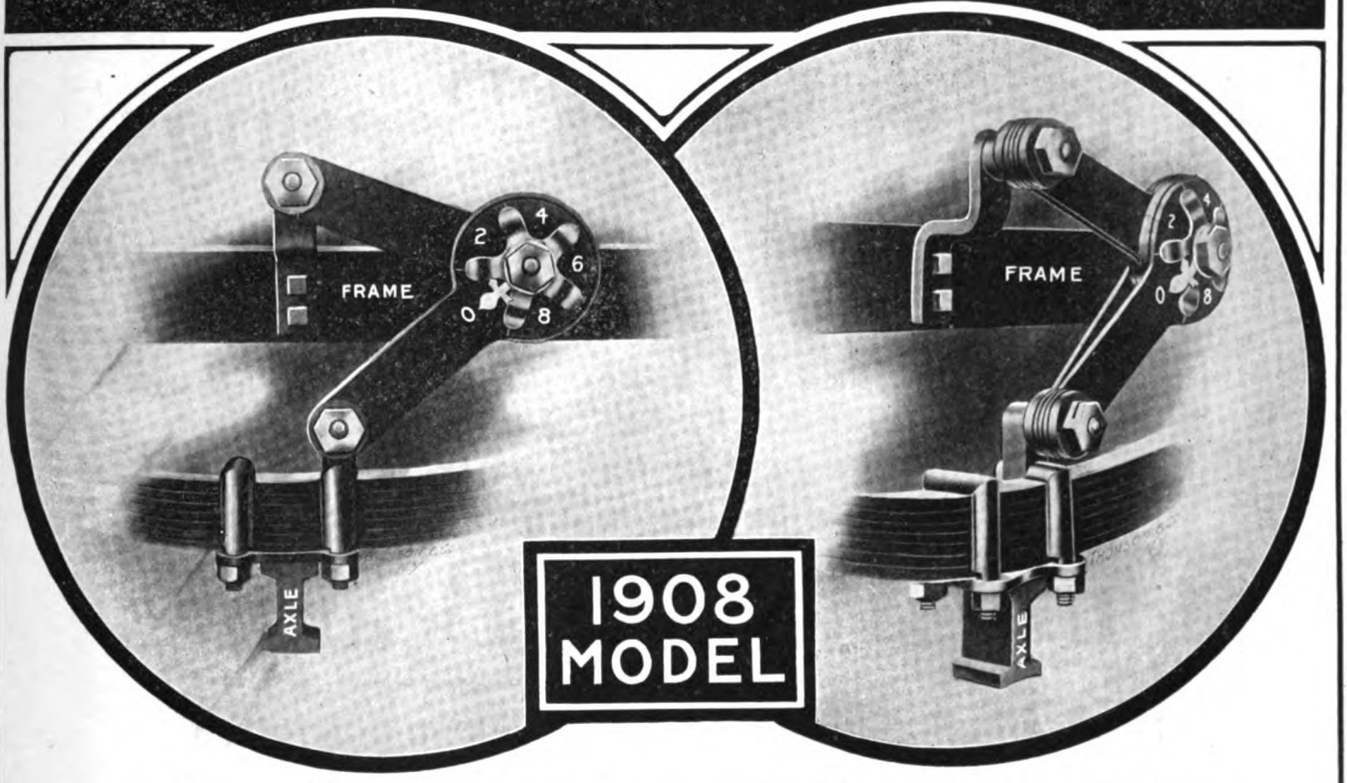
Made by

The Standard Co.,

Torrington, Conn., U.S.A.

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TRUFFAULT-HARTFORD SHOCK ABSORBER



"Renders Real Rough Road Relief"

¶ The spring action of a car affects its smooth running qualities. Proper control of the springs prevents excessive oscillation, which insures LESS WEAR and TEAR, LONGER LIFE OF TIRES, GREATER SPEED AND GENUINE COMFORT.

¶ This control of the springs can be secured only by the use of TRUFFAULT-HARTFORD Shock Absorber—the device that has made SAFE, ECONOMICAL AND COMFORTABLE automobiling possible.

¶ In the 1908 model we believe that we have practically obtained perfection.

¶ A distinctly new feature has been added, consisting of a regulating dial with indicator, making it possible for even a novice to obtain a perfect and uniform adjustment to suit the exact requirements of the car as measured in terms of its gross weight, and easily secure the maximum benefit.

¶ The Truffault-Hartford is the only spring retarding device manufactured with a regulating dial. It is automatically lubricated, absolutely dust and water proof, interchangeable, practically indestructible and *fully guaranteed*.

¶ Twenty prominent automobile manufacturers now use the Truffault-Hartford Shock Absorber exclusively as part of the regular equipment of their cars.

¶ Write for our "Ruff Road" booklet, Dept. I, or a demonstration will convince you—see us at the shows.

HARTFORD SUSPENSION CO., 66 Vestry St. New York

SEE US AT THE SHOW

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Don't Ask Us

Ask the men who make the good cars their reasons for using

Timken Roller Bearings

and then you will understand WHY

of all the cars exhibited at the Madison Square Garden Show **61%** of all the cars exhibited at the Madison Square Garden Show

are equipped with

Timken Roller Bearings

and this in addition to a showing of

49% of all the makers who exhibited at the Grand Central Palace Show

Each year sees more and more users added to the list and the beauty of it is last year's users are this year's users.

The Timken Roller Bearing Axle Company

Canton, Ohio

Eastern Branch—10 E. 31st St., New York. Western Branch—429 Wabash Ave., Chicago. Ill.

Exhibiting at

Madison Square Garden Show, November 2-9.

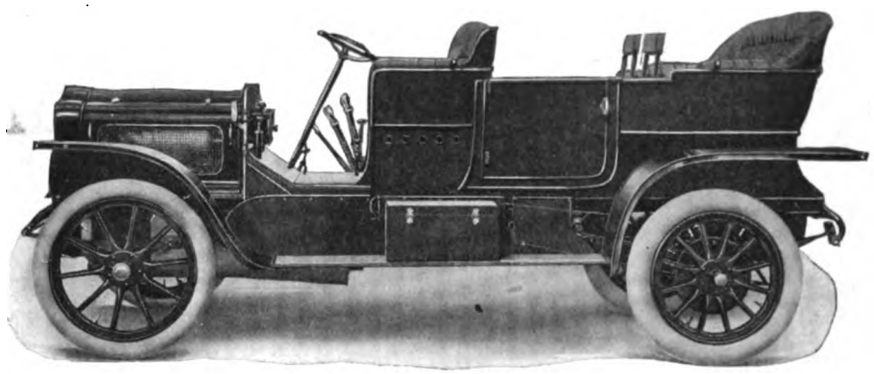
Chicago Coliseum and 7th Regiment Armory Show, December.

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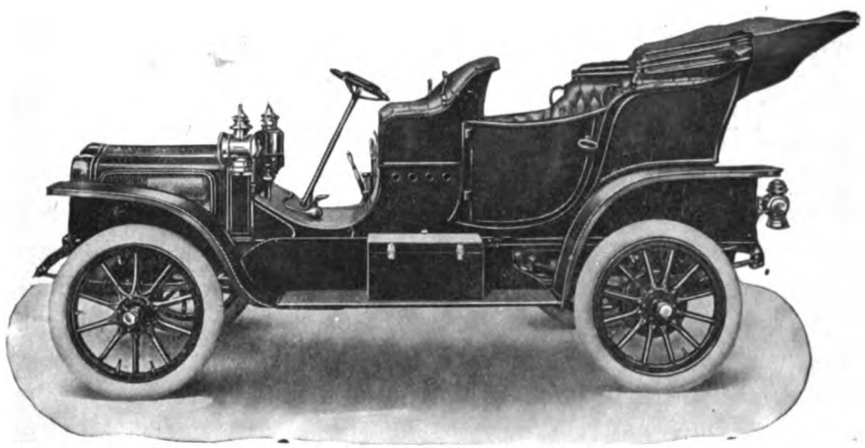
THE INCOMPARABLE

WHITE

THE CAR FOR SERVICE



MODEL "K" 30 HORSE-POWER WHITE STEAM TOURING CAR
Price $3700, f. o. b., Cleveland



MODEL "L" 20 HORSE-POWER WHITE STEAM TOURING CAR
Price $2500, f. o. b., Cleveland

Write for catalog describing the above models and our runabouts, limousines and landaulets

THE WHITE COMPANY

CLEVELAND, OHIO

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The Anti-Fatigue Car

It never grows weary of well doing. All are beginning now to realize what the users of it and its builders always have known—that the

American Locomotive Motor Car

is the "greatest touring car in the world, bar none." Tourists boast that with this machine they can always keep their schedule and those who have driven it farthest, say:

"IT STAYS NEW"

Imported Materials. American Workmanship.

Vanadium, "the anti-fatigue metal," is in ALL its steel and iron.
What lasts best. *is* best.

The energies and backing of a $50,000,000 company are behind it.

AMERICAN LOCOMOTIVE AUTOMOBILE COMPANY

1886 BROADWAY, NEW YORK **Factory, Providence, R. I.**

PARK SQ. AUTO STATION, Boston — AMERICAN LOCOMOTIVE AUTOMOBILE AGENCY, Pittsburg — W. W. SHAW CO., Chicago

Matheson

THE MATHESON is standardized. The few changes for 1908 are unimportant refinements. As a matter of fact, most of these were incorporated in mid-season, in our '07 cars. This is the Matheson policy. We do not "save up" new features till the beginning of a new selling season. We neither expect nor desire Matheson owners to buy a new car every year, nor every other year. We are building today 1908 Mathesons, 1909, 1910, 1912 Mathesons, and he who invests will have, years hence, a car which will, after the hardest use, be running as strongly, as reliably, giving as efficient and as economical road service as any high class car then offered for sale. A 1906 Matheson stock touring car still holds the world's record for having carried seven passengers a mile in 50⅕ seconds. Most cars are bought:
Matheson cars are invested in.

Write for our new booklet, "I Drove My Matheson—" by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. Better still, visit our exhibit, Space No. 25 in the gallery, at the Madison Square Garden Show. The Matheson sets a standard by which you may judge other high powered cars.

Licensed under Selden Patent **Touring Cars, 50 H. P., $5500** Guaranteed One Year

Palmer & Singer Mfg. Company

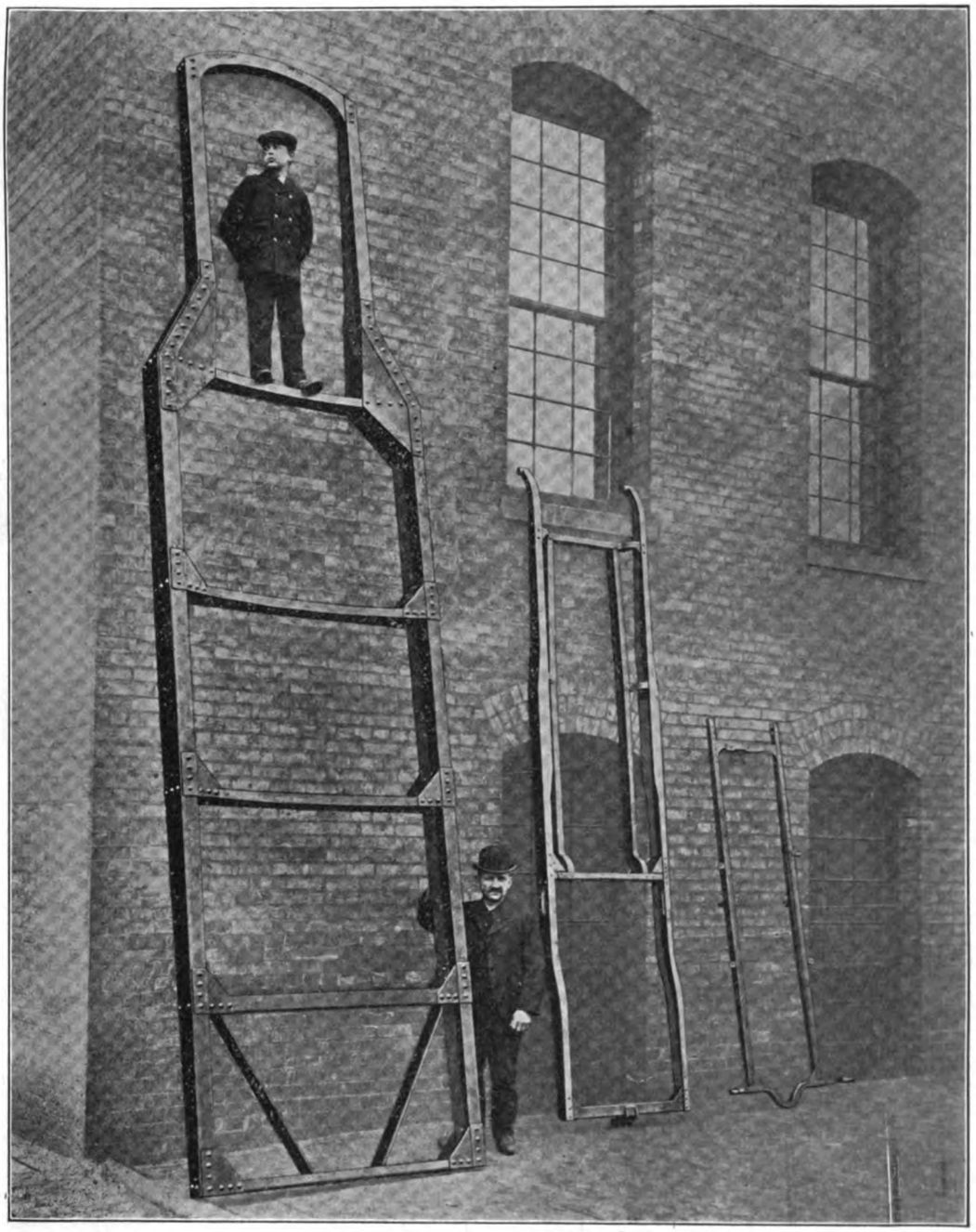
1619 Broadway (Formerly Matheson Co. of New York.) **New York**

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SMITH FRAMES

From Smallest to Largest Pressed Steel Automobile Frames

HIGH CARBON, NICKEL OR CHROME NICKEL STEEL



A. O. SMITH CO.

MILWAUKEE, WIS.

Largest Producers of Pressed Steel Automobile Frames in America

STEEL STAMPINGS OF ALL KINDS

SEND IN PRINTS FOR ESTIMATES

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"KEEP YOUR EYE ON CONTINENTALS"

New Prices

FOR

Continental TIRES

The tremendous volume of business that has come to us on Continentals enables us to manufacture with greater economy without lowering the quality.

Write for new price list. All styles and sizes included.

"They're specifying Continentals on 1908 cars"

Continental Caoutchouc Company

JOE M. GILBERT, General Manager

43 Warren Street, New York

BRANCHES:

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TRADE-MARK

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7 to 1 is the preference in solid tire equipment at the two New York Shows voluntarily expressed in favor of

"FIRESTONE"
Side-Wire Motor Tires
The World's Standard

37 Cars equipped with Firestone Solid Motor Tires

5 Equipped with nearest competing type and make

Seven other competitors divided the remaining 12 sets.

Every Firestone Tire was bought and paid for at regular prices.

Firestone Tire & Rubber Company, Akron, Ohio

1908 Elmore Valveless 2-Cycle 1908

The information which it contains is so remarkable— so very much out of the ordinary—that this advertisement will have failed in its purpose if it does not impel you to consult with the nearest Elmore agent at once.

The Elmore agent is prepared to show you:—A car which will run for 2,000 miles on one set of ordinary six-inch dry cells.

A car that will drain those cells to so low a point that cells ordinarily discarded as useless for others cars will operate the Elmore.

A car in which all troubles due to batteries, timer or coils are cut out altogether.

A car in which the ignition system ceases to be any occasion for thought or care at all.

A car which has not a single valve and consequently none of the troubles incident to valves, cams or springs.

A car equipped with continuous turning power which means—no idle stroke—and an impulse from each cylinder with every turn of the fly wheel.

A car in which the repair cost is practically nil because it contains none of the deficiencies or complications in engine construction, ignition system or usage of valves by which repairs are rendered necessary.

A car that to the unbiased investigator puts the four-cycle theory of construction into a defensive attitude and has helped to hasten the widespread adoption of the six cylinder idea—a vain effort to approach thro' increased cylinders, cost and complications, the marvelous efficiency of the Elmore continuous torque.

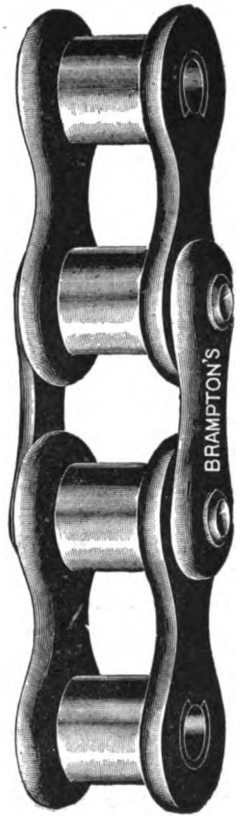
A car that is doing so many almost unbelievable things in the hands of several thousand owners that our chief difficulty is to find plain English words which will convey to you an adequate idea of the wide gulf that separates it from the ordinary four-cycle car.

Write for the Elmore literature—but see an Elmore agent.

THE ELMORE MANUFACTURING CO., 1104 Amanda Street, CLYDE, O.

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THE BRAMPTON CHAIN

The **stongest** chain in the world; made of **self-hardening steel** with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

Some chain manufacturers have copied the Brampton chain as near as they could. Their chain somewhat resembles the Brampton chain in appearance, but they have been unable to copy the material **(self-hardening steel).**

No change has been made in the construction of the Brampton chains in the past ten years. **What does that signify?**

Our price list is not copyrighted and our competitors are welcome to use it. One of them has done so, using our numbers, sizes, prices and descriptive matter.

It is therefore easy to be seen that the Brampton chain is The One Standard of the World.

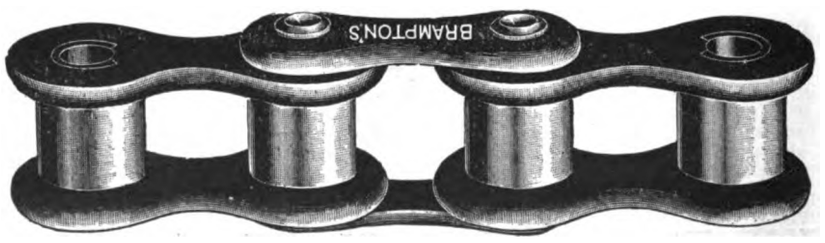
All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitators and get the genuine Brampton.

PRICES THE SAME AS AMERICAN-MADE CHAINS.

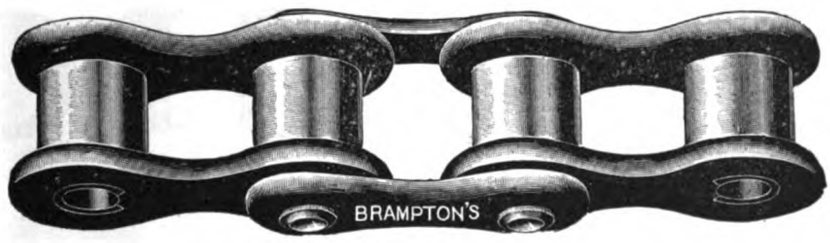
We are the Sole American Agents. Catalog on request.

CHAS. E. MILLER, MANUFACTURER, JOBBER EXPORTER AND IMPORTER

PHILADELPHIA BOSTON CLEVELAND



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Price! That's The Rub

The price of the CELEBRATED BRAMPTON CHAINS, (the best in the world) is the same as the American made chains.

Large Sales

make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufaeturers, jobbers, dealers and users.

Price Being Equal

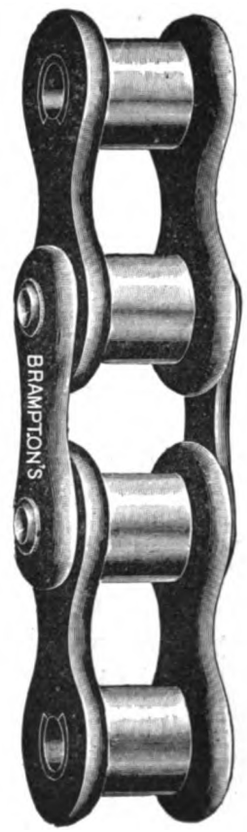
What would you do?

The manufacturers of American motor cars will fit the BRAMPTON CHAIN to your car if you order that way—no extra cost to either you or the manufacturer.

We carry in stock all BRAMPTON Standard Sizes to fit American and Foreign cars.

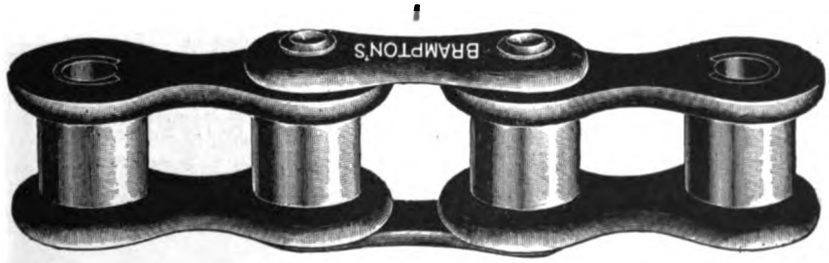
PRICE, the same—QUALITY, that's DIFFERENT.

Agents Wanted in Unoccupied Territory



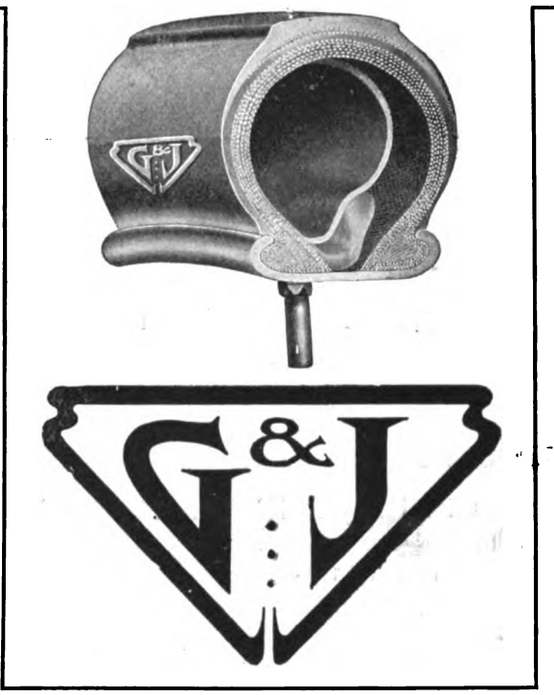
Home Office, 97-99-101 Reade Street, New York City

DETROIT BUFFALO 54th Street and Eighth Ave. NEW YORK CITY



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TIRE LOGIC



MEN who are careful in their selection of tires usually choose a tire that is carefully made by experienced conscientious makers. We believe that this Oval Raised Tread is the best automobile tire made. Many men call it "The Tire of the Day." We know that if you'll give one G & J tire a fair, square trial on your automobile, you'll soon equip it with a whole set, ¶ Are you willing to trust us? Will you make the trial? Will you write for prices? ¶ We build our Oval Raised Tread Tire with the famous Non-skid, non-side-slip Midgley Tread if desired. We can also supply you with the new 1908 Universal Midgley Rim.

G & J TIRE CO.

INDIANAPOLIS, IND.

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CLEVELAND—New No. 1837 Euclid Ave.
DETROIT—247 Jefferson Ave.
CHICAGO—1434 Michigan Ave.
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SAN FRANCISCO—423-433 Golden Gate Ave.

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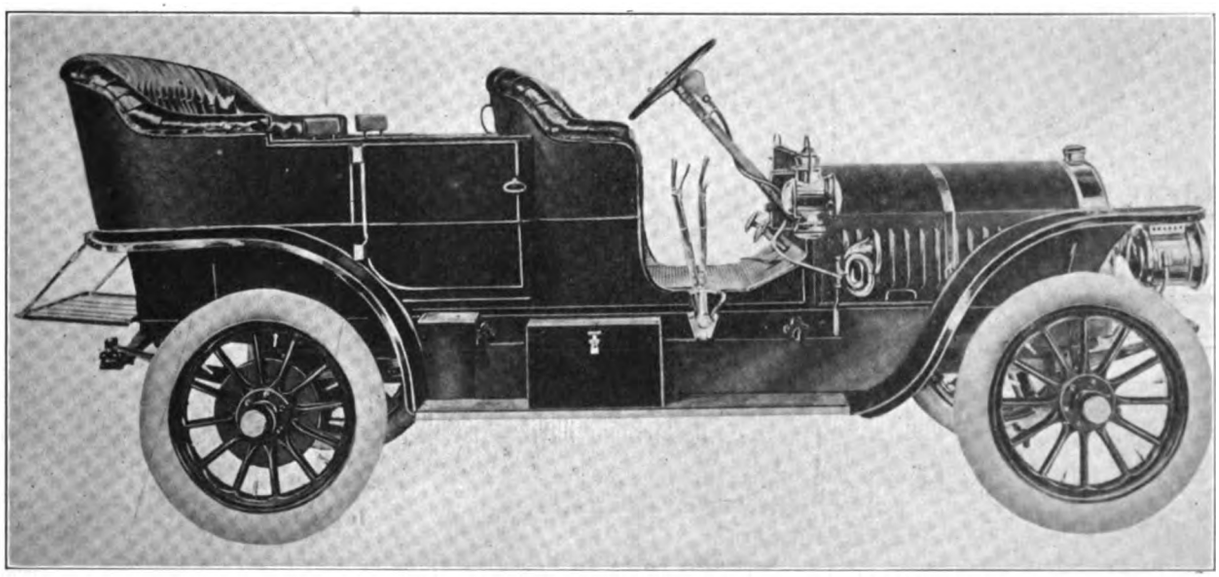
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National

MOTOR CARS

"THE ALL BALL-BEARING CARS"



The 1908 Line consists of

Two 4-Cylinder and Two 6-Cylinder Models

in Touring Cars, Limousines and Roadsters. Each equipped with **National Ball-Bearing Motors**

The entire line embodies the tried and proven NATIONAL type of construction, refined and perfected in all details to the highest possible degree.

National Model K, 4-cylinder, 4⅞x5, $3,500.00		**National Model R, 6-cylinder, 4½x4¾, $4,200.00**	
National Model N, 4-cylinder, 5x5, $3,700.00		**National Model T, 6-cylinder, 5x5, $5,000.00**	

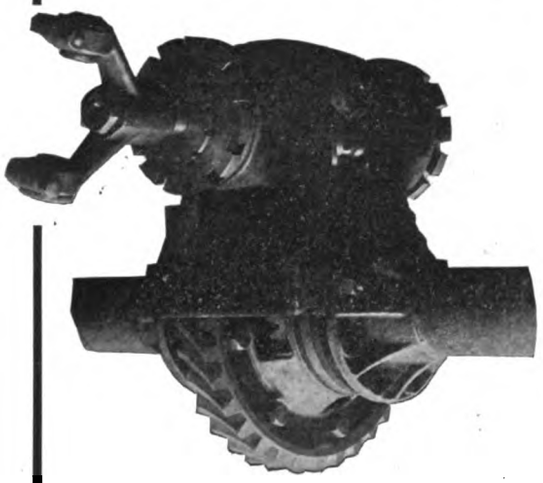
Each machine carries 7 passengers comfortably.

National Motor Vehicle Company, Indianapolis, Ind.

Member American Motor Car Mfrs. Ass'n, N. Y.

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HINDLEY SPIRAL GEARS



Especially adaptea

to

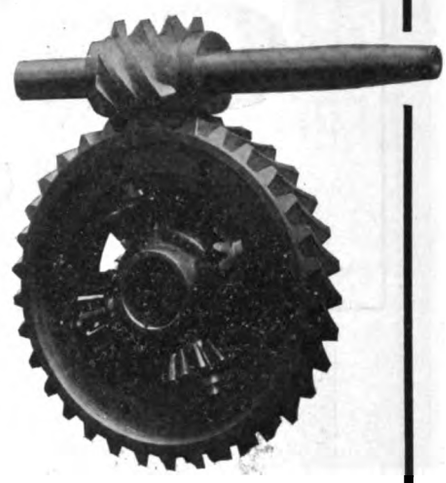
HEAVY TOURING CARS

AND

TRUCKS

These Gears were used on a Mitchell Truck in its run from Chicago to New York.

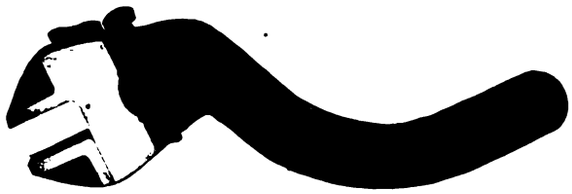
You are invited to ride in our demonstration car when in Philadelphia.



MORSE, WILLIAMS & CO., *Engineers,* **Philadelphia, Penna.**

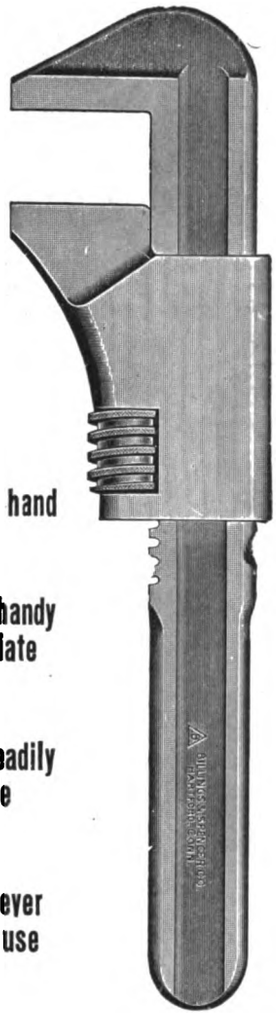


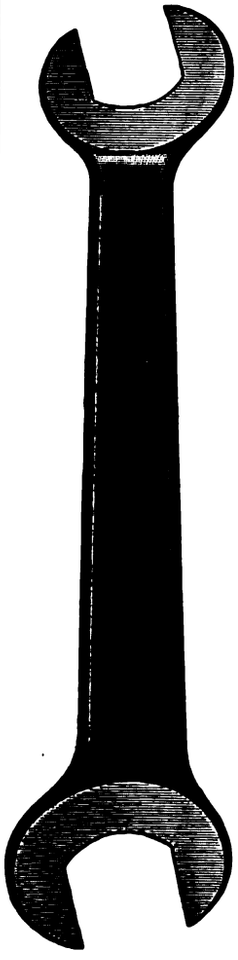
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"EVERYTHING DROP-FORGED"

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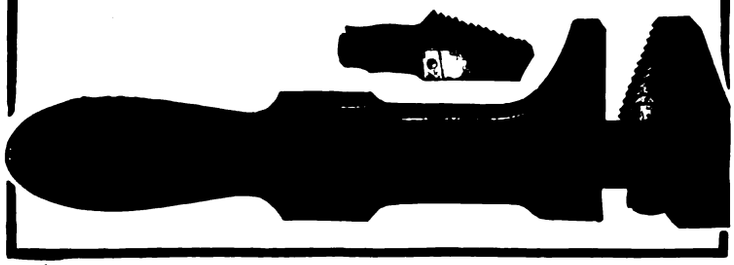
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Four Exclusive Innovations for 1908

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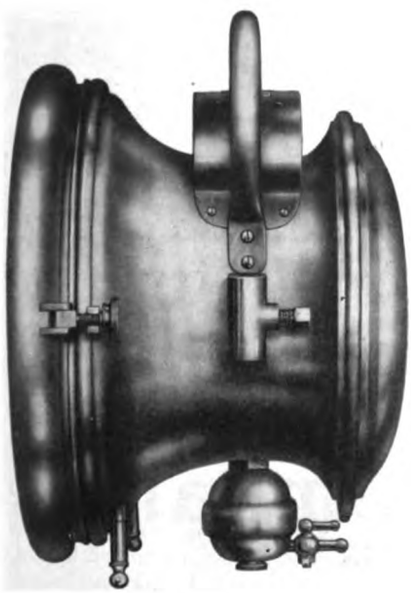


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II—Headlights assembled by interior screws which permit a perfectly smooth exterior surface are in construction *exclusively* Solar.

III—A New Black Finish with a metallic lustre, impervious to heat and moisture, eliminating the care of keeping brass lamps bright, is applied *exclusively* by us.

IV—The Besnard System of Light Projection and Eclipsing. We have United States Patent Rights *exclusively*.



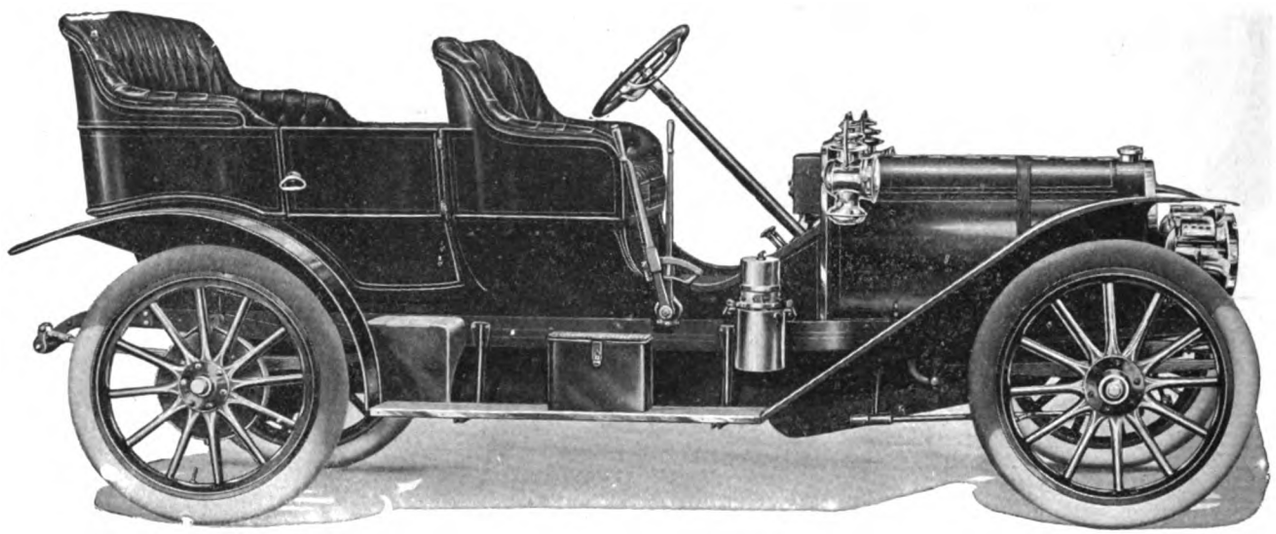
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Kenosha, Wis. **New York City**

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Rambler

Model 34
$2,250



In this car is embodied every modern feature that has withstood the severe test of practical service, and each has been refined and developed to the highest degree of mechanical perfection.

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Equal improvements have been made in accessibility, comfort and outward appearance, and we offer this car as the equal, from every practical standpoint, of any car on the market, regardless of price.

We invite your most thorough examination, positive that it will convince you of the superiority of the Rambler.

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Our advance catalog, describing in detail this car, both as touring car and roadster, and the new utility car, Model 31, is at your disposal. Write for it now.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, November 7, 1907. No. 6

BUDLONG NOW A. L. A. M. MANAGER

Former Hartford Man Chosen to Succeed Cutler—Clifton Re-elected President and G. H. Day a Committeeman.

M. J. Budlong is once more a large cog in the automobile industry—this time as general manager of the Association of Licensed Automobile Manufacturers, to which post he was elected yesterday to fill the vacancy made by the retirement of E. H. Cutler.

When Budlong resigned the presidency of the Electric Vehicle Co. and went abroad some two months ago, it was a safe assurance that a man of his tact and ability would not long remain out of harness. Since his return from Europe he has not lacked proposals and that he chose to become the manager of the A. L. A. M. is no surprise. After the embarrassment of the Knox Automobile Co., of which he was the head, it was known that E. H. Cutler would retire and Mr. Budlong has been for several weeks mentioned as his most likely successor. As the representative of the Electric Vehicle Co., Budlong had been a member of the executive committee of the A. L. A. M. from the time of its organization, and in consequence is familiar with its affairs.

Hardly less notable that Mr. Budlong's election is the return of George H. Day, the father of the A. L. A. M., as one of its active counsellors. He was made a member of the executive committee at the annual meeting which occurred yesterday in the New York office of the association.

Thirty of the thirty-one firms holding membership in the association were represented at the meeting, and the election of officers resulted as follows: Charles Clifton, George N. Pierce Co., president; Thomas Henderson, Winton Motor Carriage Co., vice-president; H. H. Franklin, H. H. Franklin Manufacturing Co., treasurer, and L. H. Kittredge, Peerless Motor Car Co., secretary. The new executive committee chosen comprises President Clifton, who has proven the right man in the right place; George H. Day (Electric Vehicle Co.), William E. Metzger (Cadillac), S. T. Davis, Jr. (Locomobile), and Thomas Henderson (Winton). Mr. Henderson succeeds F. L. Smith of the Olds Motor Works. Mr. Smith asked to be relieved, as he finds it impossible to get to New York to attend the regular meetings of the committee.

Shoemaker Tangled in Two States.

Before the Shoemaker Automobile Co. had removed all of its effects and money from Freeport, Ill., to Elkhart, Ind., the funds in bank that remained in the former place, were attached by Frank W. Stewart on a claim of $3,737.50, alleged to be due for commissions on the sale of the company's stock. The papers in the case were served at midnight. In Elkhart, too, some of the subscribers to the fund that induced the Shoemaker company to remove to that point became timid and refused to pay the amounts subscribed until they actually saw the factory in operation. As a result, Charles E. Clark, manager of the concern, applied for the appointment of a receiver. The proceeding was a friendly one and is understood to be in the nature of a protective measure.

Court Deals with Pope Affairs.

As the Motor World stated would be the case, George W. Yule, the head of the Badger Brass Mfg. Co., and chairman of the creditors' committee, has been formally appointed permanent co-receiver of the Pope Mfg. Co. At the same time Albert L. Pope's appointment as temporary receiver was made permanent. They are required to file a joint bond of $200,000. For his services as temporary receiver, Mr. Pope was allowed by the court the sum of $2,500; and the two appraisers of the Connecticut property, Fred C. Billings and John R. Hills, were each allowed $1,000. In the course of the proceedings it was made known that during his term as temporary receiver Mr. Pope had conducted the business without borrowing a penny.

HENDERSON NEW HEAD OF N. A. A. M.

No Other Change Made at Annual Election —Retiring President Urges Conservatism—Initiation Fee Now $500.

Thomas Henderson, of the Winton Motor Carriage Co., Cleveland, is the new president of the National Association of Automobile Manufacturers. He was elected to the office at the annual meeting of the organization held in New York City yesterday. All other of the incumbents were re-elected as follows: Vice-president, S. D. Waldon, Packard Motor Car Co.; second vice-president, William E. Metzger, Cadillac Motor Car Co.; third vice-president, L. H. Kittredge, Peerless Motor Car Co.; secretary, C. C. Hildebrand, Stevens-Duryea Co.; treasurer, William R. Innis, Studebaker Automobile Company. In accordance with the request of the American Automobile Association for the appointment of a conference committee, the president was instructed to make such an appointment. The suggestions relative to racing on circular tracks recently adopted by a conference under the auspices of the American Automobile Association, were fererred to the contest committee for action.

Immediately preceding the session of the executive committee, the general meeting was held at which Charles Clifton (Pierce), William E. Metzger (Cadillac), S. T. Davis, Jr. (Locomobile), S. D. Waldon (Packard), and L. H. Kittredge (Peerless), the members of the executive committee, were re-elected to serve for a term of three years.

The general meeting also amended the by-laws by increasing the initiation fee from $25 to $500.

The report of the retiring president, Albert L. Pope, was of uncommon interest. He warned the members of the association that a conservative course would be the best one to pursue for some little time as regards their plans for marketing cars. Hegards their plans for marketing cars.

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In the Retail World.

J. E. Kennedy & Co., of Crawfordsville, Ind., have opened a new garage.

H. B. White is erecting a brick garage at 1325 Mount Curve avenue, Minneapolis, The cost is estimated at $5,000.

The American Auto Co., a new company of Cedar Rapids, Iowa, has purchased the interests of the Henderson Auto Co., of that city.

The Lichtie Automobile Co., of Toledo, O., is building a new garage at Eleventh and Madison avenue; it will be completed the first of December.

The recently organized Owego Motor Co. of Owego, N. Y., will erect a concrete building to be occupied as a garage. It will be on Central avenue, and is to cost $3,000.

Beloit, Wis., is to have a new garage to cost $7,000, located on Broad street, just outside the business center of the city. Mrs. C. R. Robinson will own it and Harry Vale is to be manager.

William Oldknow and John F. Kiser, of Atlanta, Ga., have petitioned for incorporation of the American Motor Car Co., to be capitalized at not less than $1,000, and to act as an automobile sales agency.

F. H. Osler, of Pomona, Cal., is having plans drawn for a brick building on Third street, between Main and Thomas. He will occupy it with his pump, engine and automobile business on its completion.

Schedules in bankruptcy filed by the Manufacturers Motor Car Co., New York, garagemen, disclosed assets of $8,232, and liabilities of $11,692. Of the assets $6,987 is represented by accounts and $2 by real cash.

Philip Drenner, Dixon's (Ill.) pioneer blacksmith and wheelwright, is "going into" automobiles. To make room for the new business he has built an addition 57x 28 feet, and besides conducting a repair shop, will have an agency.

G. L. Hudkins has built a large garage on South Pennsylvania avenue, Cawker City, Kan., and will operate a general garage and livery business. Three touring cars and twelve runabouts have been purchased for the conduction of the latter.

A slight fire, supposed to have been caused by spontaneous combustion, slightly damaged two or three cars in the sales rooms of the W. A. Frederick Co., 16 Columbus avenue, Boston, Tuesday of last week. The damage is estimated at $1,500.

The Spear Automobile Company has opened on Exchange street, near Federal, Portland, Me. William Dugan is president, Hon. Charles N. Trefethen vice-president, and Albert M. Speare, Jr., manager. The company will have the agency for Ford cars.

John Vaile and his son, John, Jr., have purchased a controlling interest in the Fort Smith (Ark.) Automobile & Supply Co. As the stock purchased represented the holdings of Samuel McCloud and A. N. Sicard, the latter president, change in officers will be necessary.

Putting new wicks in the lamps of an automobile for a party from Newark resulted in a fire in Browne & Schmidt's garage on Paterson street, Paterson, N. J., about midnight, Sunday, 3d inst. When the lamps were lighted a lamp tray which had been set on the floor burst into flames. The premises were considerably damaged and serious injury was caused to four automobiles. Two employees were badly burned while endeavoring to check the flames before the arrival of the firemen.

Still More Shrinkage in Imports.

The shrinkage of imports continues in increasing proportions, the decline shown by the statistics for the month of October amounting to $217,586.15. The number of automobiles entered was 202, or 18 less than in October, 1906, the appraised value being $591,466.63, as against $809,052.78. The total imports for the ten months ending with October numbered 1,093 cars, valued at $4,064,249.84; for the corresponding period in 1906 there were brought into thi scountry 1,302 cars valued at $4,605,315.21; the decline in imports thus shown for the ten months was 209 cars, and $541,065.57 in appraised valuation.

Plan to Continue Dolson Business.

Creditors and stockholders of the Dolson Automobile Co., Charlotte, Mich., have agreed upon a plan for carrying on the affairs of the company. The creditors are to take 50 per cent. of their respective claims in stock, 5 per cent. in cash and the balance in long time notes. The stockholders are to raise an additional $30,000 preferred stock. If the plans go through as marked a new board of directors will be elected consisting of three named by the creditors and two by the stockholders.

Drake and Lamb in New Places.

F. A. Drake, former manager of the Fisk Rubber Co.'s New York branch, has been added to the staff of the G & J Tire Co. The vacancy in the Fisk depot has been filled by the transfer of W. J. Lamb, who hitherto has cared for the Fisk interests in Detroit.

Empire Opens New York Depot.

The Empire Automobile Tire Co., Trenton, N. J., has established a New York depot at Seventy-third street and Broadway. It is in charge of Marcus Allen, former manager of the Auto Equipment Co. of Detroit.

Parker to Place Michelin Ads.

Burton Parker has "signed up" as advertising manager of the Michelin Tire Co. For several years he occupied a similar post in the Fisk Rubber Co.

The Week's Incorporations.

Nashua, N. H.—Pollard Auto Co., under New Hampshire laws, with $5,000 capital. Corporators not named.

Wilmington, Del.—Phoenix Auto Works, under Delaware laws, with $25,000 capital; to manufacture automobiles.

Fort Worth, Texas—Maxwell Fort Worth Auto Co., under Texas laws, with $5,000 capital. Corporators—J. Blankenhedges, J. D. Hadley, and Anson T. Feagin.

Camden, N. J.—Direct Motor-Drive Mfg. Co., under New Jersey laws, with $100,000 capital. Corporators—Lewis Ryan, Walter O. Foss and William Phillips, Jr.

Milwaukee, Wis.—Auto Specialty Mfg. Co., under Wisconsin laws, with $25,000 capital. Corporators—F. E. Foster, Chas. E. Hughson, and Henry Cummings.

Wilmington, Del.—Phoenix Auto Works, Inc., under Delaware laws, with $25,000 capital. Corporators—R. Lopton, G. C. Maris, G. B. Lewis, Wilmington, Del.

Rochester, N. Y.—University Automobile Co., under New York laws, with $15,000 capital. Corporators—Edward G. White, Victor L. Craft, A. Vernon Hart, directors.

Bayonne, N. J.—Automobile Exchange, under New Jersey laws, with $100,000 capital. Corporators—Edward D. Cronin, Frederick Knowlton, and E. A. Monfort.

Boston, Mass.—Jamaica Plain Automobile Co., under Massachusetts laws, with a capital of $5,000. Corporators—James H. McClellan, Issacher M. Burdett, Lewis F. Clark.

Rochester, N. Y.—Frederick A. Mabbett Co., (automobiles), under New York laws, with $40,000 capital. Corporators—Fred A. Mabbett, Joseph W. Pressey and Raymond M. Bettys, Rochester, N. Y., directors.

Elmira, N. Y.—Morrow Mfg. Co., under New York laws, with $5,000 capital, to manufacture automobile and bicycle parts, machine tools, machine parts, etc. Corporators—A. P. Morrow, J. Morrow, S. C. Morrow, Elmira, N. Y.

New York City, N. Y.—F. B. Stearns Co., automobiles, under New York laws, with $5,000 capital. Corporators—George E. Daniels, Madison, N. J.; David C. Watts, 125 East Fifty-seventh street, and William F. Wilbour, 161 Madison avenue, New York City, N. Y., directors.

New York City, N. Y.—Harry Curtis Auto Co., under New York laws, with $10,000 capital. Corporators—Amanda Curtis, 309 West 111th street; Harry S. Rogers, 430 West 122d street, and Joseph S. Brown, 66 West Forty-third street, New York City, N. Y.

New York City, N. Y.—New England Auto Top Co., under New York laws, with $12,000 capital. Corporators—Guy A. Mackay, 212 West 108th street; George L. Wilson, 145 East Fifty-sixth street, and Benjamin Eisenstein, 322 East Eighth street, New York City, N. Y., directors.

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METZGER'S VIEWS OF CONDITIONS

Detroiter Lets Fall Some Stimulating Opinions and Points Out the Logic of the Situation.

Of course, W. E. Metzger, sales manager, and more, of the Cadillac Motor Car Co., is in New York this week. Wherever there are shows or meetings or doings of importance, there it is safe to say Metzger will be found, and in demand. He is fruitful of ideas, is clear headed and far seeing, and these are qualities that have made his opinions and counsel of value and worth the seeking. Of course he has opinions of conditions as they exist and as they are likely to exist. They are opinions that would put heart into the drooping spirit and cause it to take on new life. Because the automobile industry may have felt the influence of the financial unrest that has prevailed and because it may have become overdone by a comparatively few speculative manufacturers is not reason why the legitimate manufacturer should take alarm or be perturbed, is the Metzger opinion expressed with characteristic earnestness.

"Does any one suppose that there are any lines of industry that has not to some degree felt the effects of the financial disturbance?" he asked. "If you make inquiry regarding even such a staple and firmly rooted business as the dry goods business, it is safe to say that it will be found to have felt the influence. There have been failure in the dry goods trade every year for very many years, but the business goes on and will go on just the same and the legitimate manufacturers and dealers will continue to exist. Too many people, even some of those in our business, do not fully appreciate the position of the industry. Why," continued Metzger, warming to his words, "it is estimated that there are 118,000 automobiles in use in this country. This number represents what? The product of just about six years. Each of these six years has been a good year. It has shown a big increase over the business of the previous year. This year, 1907, is not an exception. It also shows a good growth. The percentage of increase may not have been as large as other years, but it has been an increase and a good one; the falling off has been more imaginary than real and it is very easily accounted for. Of course, there have been failures in this business exactly as there have been failures in other businesses. But not a few of the manufacturers who failed would have failed any way, it matters not if there had been no financial unrest or how good the demand might have been. Disturbances of that sort should cause no fear to the legitimate and conservative manufacturer. This is a big country and no one can make me believe that with a population of eighty odd millions, an output of 118,000 or 120,000 motor cars spread over a period of six years, or less than six, will cause stagnation. I believe the position of the legitimate manufacturer will, if anything, be more firmly fixed and I will not be surprised if instead of 120,000 cars in six years, there is not a sale for 500,000 of them within the next five years.

"And look at the prospect for the commercial car. It has been but little more than scratched. I have had good opportunities for witnessing the results of two factories that have been devoted solely to the production of commercial cars. These results have been positively inspiring and point to a future that simply must exist. I believe that the average merchant now is about convinced not only of the superiority of motor vehicles for business purpose—that scarcely admits of argument—but of their reliability and economy, as well. I believe that by 1909, certainly by 1910, we will see a tide set in for commercial cars that simply can't be stemmed. Why has it been so long coming? Because, in the first place, the demand for pleasure cars has kept us all busy and, in the second, because the development and demonstration of commercial vehicles would entail just about double the capital. It costs not merely about twice as much to build and develop them, but it costs as much more to demonstrate them as they must be and should be demonstrated to satisfy the hard-headed business man.

"But it's a good thing for every one that the demand for pleasure cars came first and has so greatly preponderated. The men who will buy commercials are the men who have been using pleasure cars and this use has served to show them how gradually and how greatly the gasolene motor has been perfected. Many of them used the cars of earlier years and suffered accordingly. If they had suffered such expensive troubles with business wagons, they would have cast them out forever more, and the growth of the commercial vehicle industry would have been stunted or killed before it had fairly begun. But in the pursuit of pleasure, it is different. Perhaps there has been a suggestion of sportiness in automobiling and when a man is in pursuit of pleasure or sport, he will endure many things which he would not suffer for a moment in business. This sort of man has continued to use motor cars until to-day, he simply must know that in the right hands and given the right treatment, they are as reliable as a horse and will do work and far more of it and more cheaply than any horse that ever was foaled.

"Yes, sir," broke off Metzger, " I repeat that if the speculators and promoters and stock jobbers in the business have found cause for apprehension, there is no real reason for uneasiness on the part of the legitimate manufacturer. The past has proven all right and there's nothing the matter with the future."

OLD HANDS REMAIN AT THE HELM

Accessory Association Makes Few Changes in Official Slate—Definitely Decides to Establish Permanent Office.

Excepting in the case of one of the vice-presidencies, no change was made in the official personnel of the Motor and Accessory Manufacturers, Inc., at their annual meeting in Hotel Astor, New York, yester-6th inst., the officers chosen by the directors being as follows: H. S. White, president; H. E. Raymond, first vice-president; H. T. Dunn, second vice-president; F. E. Castle, third vice-president; W. S. Gorton, treasurer; P. S. Steenstrup, secretary.

Immediately preceding this action by the directors, the annual general meeting of the members occurred in the same place. The revised constitution and by-laws having come into effect, directors were for the first time elected on the new basis, the result of the vote being as follows: Directors for three year terms: W. S. Gorton, Standard Welding Co.; H. S. White, Shelby Steel Tube Co.; P. S. Steenstrup, Hyatt Roller Bearing Co.; H. E. Raymond, The B. F. Goodrich Co. For two years: C. E. Whitney, The Whitney Mfg Co.; D. J. Post, Veeder Mfg. Co.; C. T. Byrne, Byrne, Kingston & Co.; W. H. Chapin, Brown-Lipe Co. For one year: E. S. Fretz, Light Mfg. & Fdy. Co.; H. T. Dunn, Fisk Rubber Co.; F. E. Castle, Gray & Davis; L. M. Wainwright, Diamond Chain & Mfg. Co.

A membership of 192 was reported and it was definitely decided to establish permanent headquarters. The treasurer's report disclosed that the organization's strong box is well filled.

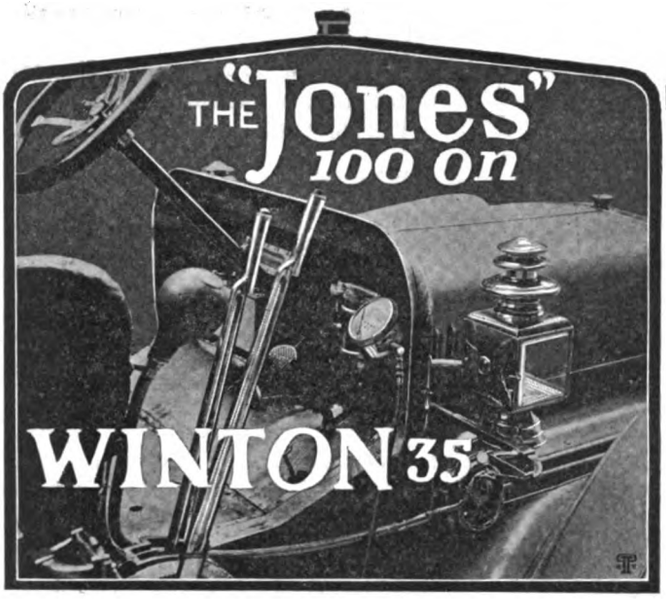
Schaaf Resigns Pope-Toledo Management.

Albert E. Schaaf, manager of the Pope-Toledo factory, has resigned that office and temporarily, at least, the position will be filled by Harold Pope. The plant in Toledo probably will be shut down for a couple of weeks, but the Pope people want it known that neither Mr. Schaaf's resignation nor the shut-down indicates any lessening of energy or determination to keep the famous car to the fore. It is such a valuable asset that when certain changes are effected in the plant, it will be restarted with undiminished force and its product will be pushed with no lack of aggressiveness.

Napier Suffers Another Fire.

Fire starting in the stock and tool room of the Napier Motor Company's plant, Jamaica Plains, Mass., Thursday last, 31st ult., caused a loss of probably $50,000, the greatest loss being to the stock. This is the second bad fire which the Napier Motor Co. has had. Several years ago there was one in the same plant which caused a loss of $125,000.

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On All the Best Cars You Will Find the Jones Speedometer

and here's a reason or two:

The Jones is the **pioneer** speed indicator.

The Jones is the accepted **standard** speed indicator.

The Jones is used in this country and abroad by Police Departments as a means for timing motor vehicles for reason of its **accuracy.**

The Jones won the Gold Medal **Reliability** Award in the Royal Automobile Club's Contest. All American and foreign manufactured speed indicators sufficiently practical to enter were in this contest.

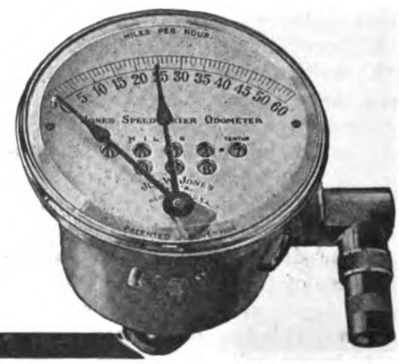
S. F. Edge had the Jones on his Napier cars when he made the world's most remarkable record, traveling 1,588 miles 1,310 yards in 24 hours, averaging 66 miles per hour, on the Brooklands Track, London, England.

The Speedometer cable revolutions per hour, at a 66 mile speed, total 168,300 or 4,039,200 in 24 hours, demonstrating the Jones **"staying"** qualities.

Do not buy a 1908 Speed Indicator without a Maximum Speed Hand and Instantaneous Resetting Trip Odometer. These features are POSITIVE NECESSITIES. They are exclusive with the Jones Speedometer and are included on all Jones standard instruments without extra charge.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, NOVEMBER 7, 1907

The Show as a Stimulant.

It is doubtful if the tonic effects of an industrial display ever were better illustrated than by the Madison Square Garden show which now is occupying the boards.

There is no disguising the facts that the semi-panic of last week and the week before made its discomfiting influence felt at the Grand Central Palace show and that when it ended there were some sighs of temporary relief of a peculiar sort. If, between Thursday night when the Palace closed and Saturday, when the Garden opened, there was not something akin to a blue Friday, it was because the expressions of many belied them.

This feeling was pretty well dissipated before the Garden show was 48 hours old. It was a recovery of spirit so remarkable as to prove rightful cause for remark. The Garden show was one of those things that occurred at exactly the right time in exactly the right way, and perhaps in exactly the right place.

Its good effects will be represented not merely by the volume of sales, but by the renewed faith and spirit with which it infused a large part of the industry and the good influence will be imparted to and shared by even those who were not of the exhibitors.

As a cure for the "blues" the Garden show is an emphatic success and is worth all and more than it may cost.

Less Polish; Greater Utility.

One of the gratifying, though not altogether unexpected new features of detail that have become markedly apparent is the use of blued steel trimmings and black nickel lamps in place of the all too prevalent brass work of former years. In one or two instances, it appears that makers are prepared to equip all their cars in this fashion, while in others one or two machines are so mounted in what seems to be a more or less tentative manner. However, that may be, the fact that several of the lamp and fiitting makers are listing 1908 lines in which the dull oxide finish is a feature, is proof that a real movement in this direction has commenced.

Agitation in favor of such a development has not been lacking for some little time. As has been pointed out in these columns repeatedly, the lustrous finish, while ornamental and even beautiful when not carried to a foolish extreme, is in the nature of a needless luxury. More than that, the accepted fact that it is difficult to keep in proper condition, is of far less importance than the danger of disaster which it involves through risk of temporarily blinding the driver by its reflection of light into his eyes.

The dull finish, whatever its ornamental value, at all events always looks the same, regardless of weather conditions or a large or small amount of care bestowed upon it in the way of cleaning. This is its chief advantage. Another point worth considering in the same connection, is that its use affords the maker a greater latitude in the choice of metals, permits the lightening of weight, increasing of strength, or reduction of original cost, practically regardless of the exterior surface to be obtained in the finished part. The almost exclusive use of brass for this purpose thus may be eliminated, plating done away with, and by the use of the proper reagents, the final colors may be graded to suit a wide range of taste and to harmonize with an astonishingly great number of color schemes.

The Eight Suggestions of the A. A. A.

Perhaps it is possible to conduct racing on the lines drawn by the eight suggestions discussed by the A. A. A. racing board and its invited trade guests, and which are printed in another column, but it well may be doubted. It is well to surround the sport with every possible safeguard, but from practically no safeguard to an almost impenetrable hedge of them is an almost about-face which the A. A. A. seems in a fair way of executing.

The suggestions read for all the world as if only the large club, the professional promoter and the big car were in mind. Scores of races have been held in country places where clubs are impossible and where nominations six weeks previous to a race are beyond the realm of practicability and yet so far as known, such events have not been attended by accident and undoubtedly they have served to spread the gospel of the automobile and to stimualte its use. To say that promoters of such affairs, say, in Kansas, or Nebraska, or Mississippi, shall first find a club to stand sponsor for them, then hire a photographer, and an expert on curves, angles and fences, and pay a big fee for their services and for the sanction, is equivalent to either snuffing out such helpful events or to encourage "outlaw" racing, that is, disregard of the A. A. A. and its rules. It is to be observed that in practically all such races, small cars are the rule, which may account for their freedom from accident. The A. A. A. has made a praiseworthy move in suggesting a limit of horsepower, but it practically is a foregone conclusion that the limit will be based on big car practice.

It certainly is courteous on the part of the A. A. A. to ask others how it shall conduct the sport, but once more it is respectfully suggested that the mission of a governing body is to govern. Why the A. A. A. did not invite the tire makers into the conference, or provide for an inspector of tires or at least for a definite method of securing tires to the rim, is an open question. Burst tires are said to have caused very many of the tragedies, and though it sounds impractical, the suggestion of an official inspector or an official or supplementary form of tire fastening is not worse than some of the suggestions laid down.

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PROBABLE DOOM OF TRACK RACING

Sanctions Will Come High if Granted at All—Suggestions Considered by A. A. A. and Conferees.

If the suggestion for the granting of sanctions for track racing by the racing board of the American Automobile Association, as advanced at a meeting of a special committee, held at the offices of the association Wednesday of last week, are carried out literally, there will be little or no track racing in this country. The meeting was called to consider the advisability of the American Automobile Association withholding sanctions for meets on tracks originally built for horse racing, and the outcome was that definite action be deferred until the various suggestions made should have been referred to the organization represented at the meeting and passed upon by them. W. H. Hotchkiss, president of the American Automobile Association, presided at the meeting, and the others in attendance were Jefferson De Mont Thompson, chairman of the American Automobile Association racing board; Benjamin Briscoe, American Motor Car Manufacturers' Association; Samuel A. Miles, National Association of Automobile Manufacturers, and Percy Owen, Importers' Salon. Ira J. Cobe, Chicago A. C., and Charles Clifton, Association Licensed Automobile Manufacturers, who also were appointed on the committee, were absent.

The discussion resulted in the drafting of a tentative set of rules to govern the racing board in granting sanctions, to be passed upon by all the organizations interested, before definite action is taken. If the suggestions literally are carried out it will place sanction fees so high as to be out of reach of a majority of promoters. It was the sense of the committee that a limit of horsepower, as advocated by the Motor World, to be fixed by formula, be adopted.

The suggestions are that the racing board of the American Automobile Association grant sanctions for speed contests on tracks not specially built for the purpose, only on certain terms, viz.:

1. That the application be made through or by a club or organization which is a member of such association.
2. That such application be so made at least six weeks before the date set for the contest; provided, that in case a sanction has been granted for a contest on such track prior to the date of such application, and after the investigation and under the conditions here outlined, such second or other application could be made within a shorter time before the date set for the contest.
3. That such application be accompanied by a photograph or photographs, showing the turns of such track, and the location of the grandstands and public enclosures thereon, and also by an accurate drawing and specifications of the track, fences and structures adjacent.
4. That such application be also accompanied by a certificate of such club or organization, that it has examined such track and the fences and buildings adjacent, and that, in its opinion, the contest or contests for which sanction is asked, can be held thereon with reasonable safety to spectators and participants, which certificate must contain an agreement upon the part of such club or association that the public will be limited to certain portions of such buildings or grounds—specifying them—and excluded from all other portions.
5. That such application include the nomination of a person or persons, whom, or from whom, the racing board may appoint a referee, who, at such contests, shall be the official representative of such board and charged with the duty of compelling the observance of all stipulations specified in such sanction and application, as well as the rules of the racing board, in particular as to the competency of drivers and the mechanical condition of cars.
6. That sanctions on such applications be granted by the racing board only after an investigation of the track, fences, buildings and adjacent grounds, to be made by such board or member of it or a competent engineer appointed by it for that purpose.
7. That all sanctions granted by the racing board specify: (a) the number of cars which may take part in any heat, and (b) the upward limit of the horsepower of such cars, the same to be fixed by a formula to be subsequently announced, as to which limit of horsepower and as to which formula the committee requests the advice of the various organizations represented.
8. That applications for sanctions be accompanied by a sufficient fee, to be fixed by the racing board, to cover all its expenses in connection with the examination of the track and its surroundings, as well as the reasonable expenses and compensation of any referee whom it may appoint as its representative.

Those at the meeting agreed that the above suggestions be submitted to the various organizations represented in the near future, and after such submission the committee would be called together by its chairman and definite action taken. As a part of the proceedings a report was presented summarizing the vote of the clubs in the American Automobile Association which have thus far taken action for or against the granting of future sanctions on horse tracks as now constructed, although it was admitted that most of the clubs voting favored the continuance of racing on suitable tracks or under suitable restrictions or supervision, so that the result of the vote really is not to be accepted at its face value, which is as follows:

In favor of such sanctions unqualifiedly—Milwaukee Automobile Club, Motor Car Racing Association of Baltimore, Automobile Club of Kansas City.

In favor of such sanctions, but with certain restrictions—Chicago Automobile Club, Bay State Automobile Association, Quaker City Motor Club of Philadelphia.

Against such sanctions—Automobile Club of Cincinnati; Massachusetts Automobile Club; Automobile Club of Pittsburg; Rhode Island Automobile Club; Rochester Auto-Island Automobile Club, Rochester Automobile Club; Automobile Club of Buffalo; Cleveland Automobile Club; Wilkesbarre Automobile Club; Albany Automobile Club; Wilkinsburg, Pa., Automobile Club; Springfield, Ohio, Automobile Club; Automobile Club of Detroit; Brockton, Mass., Automobile Club; Automobile Club, Cass County, Ind.; Automobile Club of Central Pennsylvania; Janesville, Wis., Automobile Club; Automobile Club of Auburn, N. Y.; Grand Rapids, Mich., Automobile Club; Automobile Club of Schenectady, N. Y.; Worcester Automobile Club; Long Island Automobile Club; Weld County, Col.; Automobile Club of St. Louis; Owatonna, Minn., Automobile Club; New Jersey Automobile and Motor Club; Lima, Ohio, Automobile Club, and the Peoria, Ill., Automobile Club.

Against such sanctions in the opinion of the club secretaries, but no official action yet taken—Oswego, N. Y., Automobile Club; Springfield, Ill., Automobile Club; Bloomington, Ill., Automobile Club.

"Legal Speed Limit Run" in Rain.

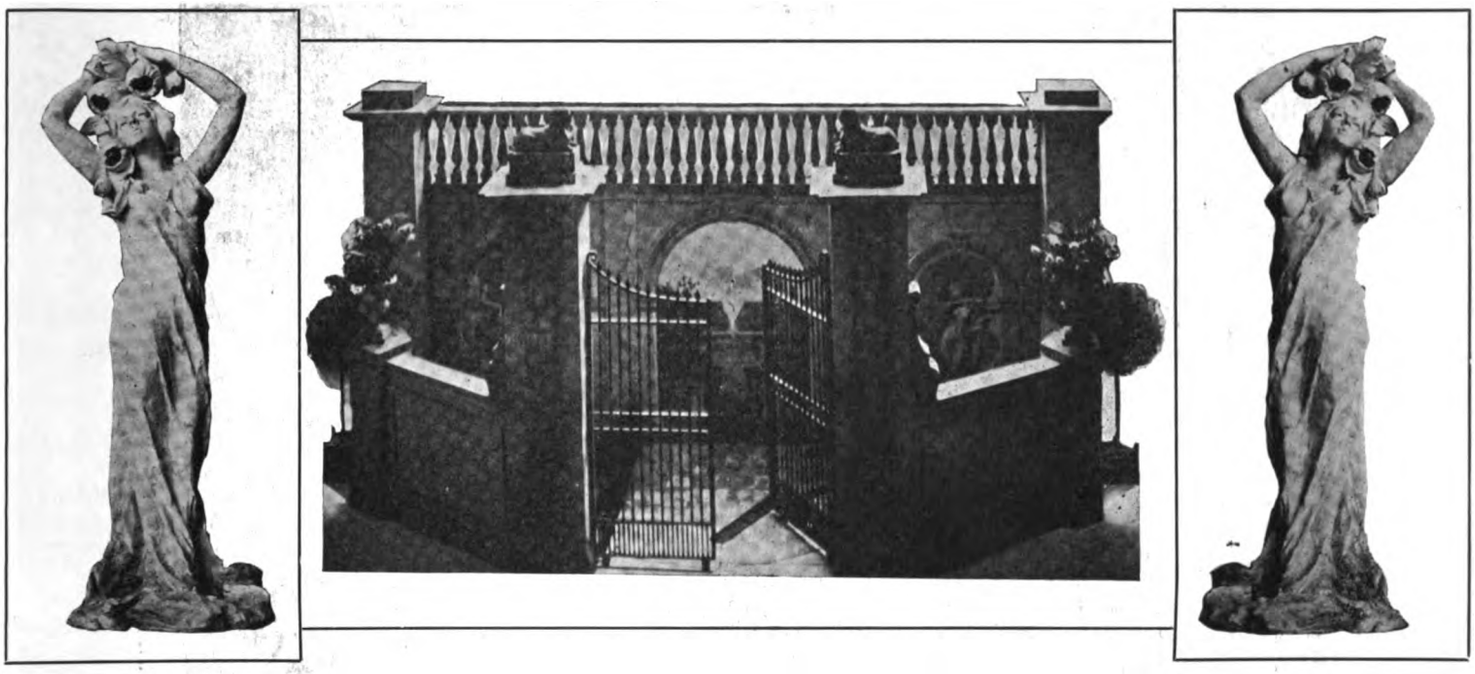
Driving through a rainstorm that at times was blowing and served to make the roads slippery, eight automobiles contended in the annual cross country run of the Automobile Club of Philadelphia, on Saturday, 2d inst. The run, designated the "legal speed limit run," was for the Brazier challenge cup. Under the sules of the contest the speed maintained was to be the maximum permitted under the States laws and by the regulations of the cities and towns through which the course lay. Every minute ahead or behind time at the checking stations, which were unknown to the contestants, constituted a point against the car gaining or losing the time.

Two pilot cars started from the Manufacturers' Club, Philadelphia, at 7.30 a. m., laying out a course through Paoli, West Chester, Pheonixville, Jeffersonville, and Centre Square, scattering confetti on the way. G. B. Fletcher, 30 Packard, was the first starter, at 8 o'clock, and was followed at two-minute intervals by Henry P. Bailey, 40 Winton; Ewing L. Miler, 30 Packard; H. Morris, 35 Stoddard-Dayton; Dr. W. A. Phreaner, 40 Winton; C. Yarnell Abbott, 35 Pennsylvania; Allan Wood, 35 Ford, and C. J. Swain, Apperson "Jack Rabbit." The course measured 88.6 miles, and the running time allowed was 5 hours 19½ minutes. Swain won with a penalization of 14.5 points, Wood being second, with 15.5 points.

Governor Floyd Advocates Boulevard.

Governor Charles H. Floyd, of New Hampshire, who was the principal guest at a special meeting of a section of the State Grange at Plymouth on October 24, discussed the matter of State roads and said he was in favor of the next legislature passing a bill for the appropriation of $300,000 to build three boulevards—one in the Connecticut valley, one in the Merrimac valley, and one on the east side of the State.

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The Garden Show, Its Exhibits and Its Influence

Probably one show in New York would prove better than two, but let it be said that for once the automobile industry has been well served by the "double bill," which has been presented during the past few years.

If it were not for the show which opened in Madison Square Garden on Saturday last, 2d inst., and which will continue until Saturday evening next, a very large part of the trade would have had a very pronounced case of the "blues." Not even desire to make it, will permit of the statement that the results of the earlier show, the one held in Grand Central Palace the week previous, were of the sort to promote an excess of enthusiasm or contentment.

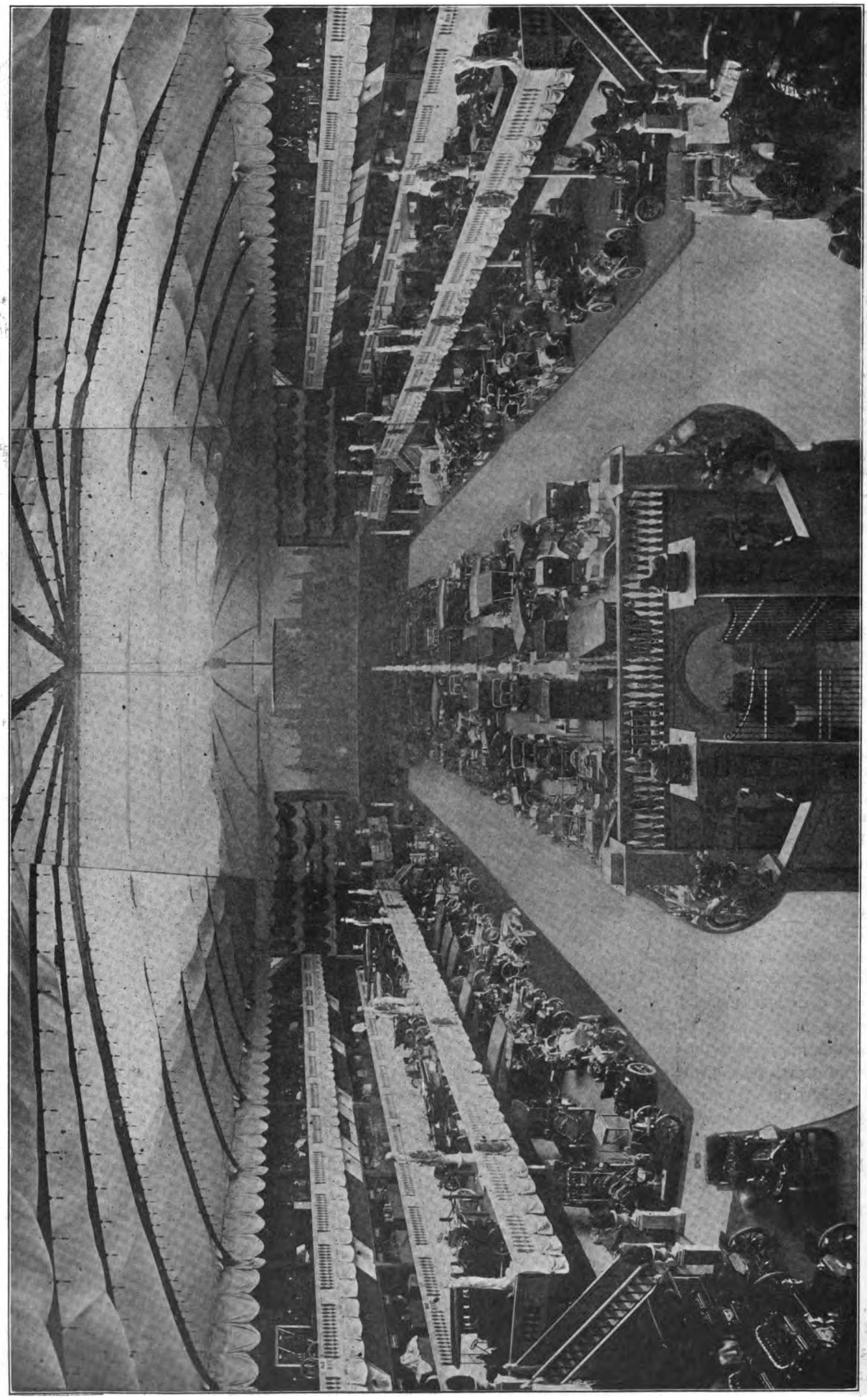
Perhaps the long period of financial unrest which climaxed in semi-panic during the week had something to do with the lessened attendance and dearth of and interest of sales which marked the Palace show, but whatever the cause, disappointment was the portion of very many of those who exhibited there. Most of the better known manufacturers of cars are not included in this category. They had come to the Palace with their 1908 outputs either practically sold or over-sold, and their presence was largely due to sentiment of the "rally 'round the flag, boys," kind. But to the new makers and to those who depended on the show to fill their order books the harvest was meagre, indeed. The accessory manufacturers, who, as is always the case, comprised an overwhelming majority of the exhibitors, were outspoken in their disappointment. They made no effort to conceal it. Hope for better things at the show in Madison Square Garden was the circumstance which served to keep their faces from falling lower. And for once hope was not misplaced.

When the show opened Saturday evening a howling storm of wind and rain prevailed. It was not the sort of weather to tempt people out of doors, but for all of that the attendance was unexpectedly large. And once within the big building, Chairman George Pope and his fellows of the Association of Licensed Automobile Manufacturers' show committee, had performed their work so well that it was easy to forget the raging elements without.

As was the case at the A. L. A. M. show last year, there were no Swiss guards in ruffs and helmets to catch the eye of the visitor; there were no splashing fountains or water nymphs; nor were there painted suggestions of Alpine snows or Alpine ruggedness. But chauffeurs in fancy dress, the most conspicuous feature of which was a scarlet coat, greeted the visitor as he passed the ticket-takers in the lobby. The scarlet coats constituted the first suggestion of warmth, and after passing the heroic Italian gateway, which constitutes the "frontispiece" of the show the glow of the decorative plan itself became apparent. It was not merely the glow of the thousands of electric lights, but of the deep crimson, which relieved by a soft, warm gray, formed the color scheme. The carpeting was of the same cordial hue, as were the signs on which the lettering was of gold. "Dummy" railings, delineated on cloth, circled each of the three balconies, and if one strained his imagination, he might fancy that residents in the huge painting of an Italian vila, which was employed to mask the rear walls and boxes, were looking from afar on a great amphitheatre filled with modern motor cars. If less elaborate, the whole setting is more effective than the Alpine scenery of a year ago. All is harmony, that is, all save the telharmonic music which is supposed to issue from nowhere. It is the one jarring note. It resembles the "music" ground out on a handorgan by a concealed Italian. Fortunately, there is not too much of it, and fortunately, also, a full orchestra relieves the rather doleful dirges.

Under the influence of the illumination, the warmth of decoration, the collection of magnificent cars, and of a large first-night attendance, spirits that had drooped because of previous disappointment immediately began to revive. When the show

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Panoramic View of the Garden Show.

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Under the "Italian Villa" at the East End of the Garden.

closed that night, practically every one had recovered "tone" and was feeling distinctly better. On Monday the good feeling was strengthened. Throughout the day the number of dealers in attendance was gratifying and in the evening the crowd also was large and of good class. On Tuesday—"Dollar day"—and, incidentally, election day, when increased admission fee and holiday was expected to prove a combination that would considerably reduce the "gate," there was another agreeable surprise. While the crowd in the early afternoon was light, it picked up amazingly in the evening, and a practically full house resulted.

It is, of course, essentially a show of big, impressive cars, and nowhere can such cars be shown to better advantage than in Madison Square Garden. Other buildings may be as expansive, but they lack the light and the great height of dome that adds so much to the general effectiveness. The Cadillac is almost alone in the field of small, popular priced cars, but it holds its own well and, with their new bodies, which seem of higher finish than heretofore, the Cadillacs never showed to better advantage. Even the body change in the famous single cylinder Cadillac, while not extensive, has served to give it a "niftier" appearance. There is a buckboard in the show, but it is in a class apart and also is there an Autocar runabout, but it is quite overshadowed by its big brother. There are a few big little cars like certain of the Franklins, and there is a new Buick runabout at $850, which is making its debut, but, of course, it has yet to earn its spurs, so to speak. Probably the Thomas town car also comes under the head of a big little vehicle and it is not too much to say that it merits all the attention it receives. The Franklin cab was one of the unanticipated cars, which, because of its high build and unlikeness to anything else in evidence, "stands out" quite prominently. In the electric department there are of course, a number of runabouts. Practically every exhibitor has one or more, and as always and generally speaking they are of pleasing design and superb finish.

With big cars the rule and not the exception, it is difficult for any one of them to so "stand out" as to be specially distinctive, but, if apart from striking colorings, there are three cars that do so stand out, undoubtedly they are the Pope-Toledo touring coach, the Apperson touring coach and the Corbin "Comet," the latter a rather lightly built double rumble runabout which with wide sweeping mud guards fore and aft suggests a huge winged bird perched on wheels. Of cars which catch the eye and cause tongues to wag, none have caused more of the wagging than the big Packard runabout finished in lavender and gold and upholstered with white calf. It has been dubbed the "honeymoon car" and it looks the part.

Viewed with an eye to color effects the display, as a whole, is surprisingly harmonious, and while here and there a bit of vivid color may be seen there is little that suggests garishness. Something more of this quality is to be seen on more detailed inspection, but the loud colors are exceptional. A great majority of the color schemes exemplify a refined taste, even where assertive hues prevail, and in a number of instances the bright color employed loses its loudness in the service of setting off a jetty black or a very deep blue or green. Perhaps the daintiest specimen of the painter's work in the entire show is the "honeymoon car," a Packard runabout from the tires of which one might almost expect to pick out kernels of rice. The color is light lavender picked out in gold and a darker shade of lavender in stripes. The upholstering is in white enamelled calfskin.

Apart from this particular vehicle the Packard exhibit is a pleasing one in the substantial richness of finish seen on the cars, which, with this and one other exception, are finished in the standard colors of this make—dark blue body picked off with primrose, and the running gear in primrose. The other exception is a limousine body in very dark green, picked off in black. The running gear is primrose.

Of several cars finished in unusual colors one is a cape top Matheson touring car, finished in a peculiar shade of light green for which no name could be found. It is gravely stated to inquirers that a lady for whom the car is intended could not name the color in which she wanted it finished, but presented her gloves and parasols to be matched in the paint shop. The "greenery-yallery" or whatever the aesthetic hue

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may be, is set off by black stripes. The car is upholstered in oak tanned pigskin.

Another Matheson production which attracts attention is a three-quarter limousine showing a beautiful natural wood finish, the finely grained panels divided by mouldings of a lighter color. The mud guards are of light colored leather. The interior is finished in woven rattan and the upholstering is in pigskin.

What many persons consider the most elegant body in the show is a Pierce Great Arrow limousine, much of the beauty of which is the interior. The upholstery and trimming are in rawhide, all the decoration being hand tooled. The decorative scheme is rich and somewhat profuse, but not beyond bounds, and in some parts there is effective use made of tiny bits of red and blue. The ceiling, with an electric lamp, in the center, is a feature in the scheme. Exteriorly the body is of dark maroon, with black sides, the hood also being black, which color appears also in stripes on the maroon. The panels are maroon, picked off with black stripes. The running gear is painted chocolate color, with black striping.

Another limousine body which repays a look inside is the Pope-Toledo touring coach. It is a striking vehicle in its outward appearance of bright yellow. The yellow is picked off with black striping, and a Victoria hood over the driver's seat serves to quiet, with its black, the noisier color. The interior finish of the body is in curly French walnut, and the upholstery is in a soft gray material. An interior electric light, sliding windows and blinds, and folding spare seats are other inside features. This car carries oxydized lamps, which, with black lamps are appearing to challenge the lamps of polished brass and nickel.

A Pope-Toledo four-seat runabout presents one of the few oddities in color. It is a peculiar light green, set off with gold stripes about a quarter-inch wide. The upholstery is leather of the tint known as ashes of roses.

An English mail coach of the old style, with an automobile hood in front of it is the form taken by one of the Apperson cars. It is a tolerably exact reproduction, and some of the well known lines in the old coach are emphasized in the color scheme of the finish, scarlet predominating. the bright color being set off by the black top and trimming. Another Apperson product staged is a touring car of pleasing body design the lines of which are lost in a perpendicular arrangement of black and red stripes, the forward portion of the body being mainly in red.

A Columbia gasolene-electric runabout, finished in a peculiar yellowish color, is one of the conundrums to visitors who are not familiar with the painting trade. Fired at attendants the conundrum elicits an answer which, as near as it can be spelled by ear is "serpentan." The attendants declared they were not joking, but they declined all invitations to spell. The color is picked off with gold stripes, and the car is upholstered in dark maroon.

CENSUS OF THE SHOW.

Car Manufacturers		42
Accessories, etc.		205

PLEASURE CARS.

Gasolene:		
One cylinder	4	
Two cylinder	8	
Four cylinder	97	
Six cylinder	15	
Total Gasolene Pleasure		124
Steam		4
Electric		38
Total Pleasure		166
Enclosed Bodies	47	
Touring Cars	65	
Runabouts (Ordinary)	29	
Runabouts (Roadster)	25	166
Chassis:		
Gasolene.		
Two cylinder	1	
Four cylinder	23	
Six cylinder	3	
		27
Electric		3
Total Pleasure Chassis		30
Air-cooled		16
Water-cooled		136

COMMERCIAL CARS.

Gasolene:		
One cylinder	3	
Two cylinder	2	
Four cylinder	5	
Total Gasolene		10
Electric		12
Total Commercial		22
Commercial Chassis:		
Gasolene	1	
Electric	1	2
Air-cooled		4
Water-cooled		7

MOTORCYCLES.

One cylinder	37	
Two cylinder	13	
Four cylinder	2	
Eight cylinder	1	
Total Motorcycles		53
Belt Drive	28	
Chain Drive	22	
Shaft Drive	3	53
Total Gasolene Vehicles		215
Total Steam Vehicles		4
Total Electric Vehicles		54
Total all Vehicles		273

Cream yellow, striped with dark green and narrower stripes of red, make an attractive finish on a Haynes cape top touring car. The upholstery is green.

An effective display of color schemes marks the exhibit of White steamers, one of which in white is especially noteworthy. It is a runabout, finished in white, with narrow red striping and upholstered in terra cotta colored leather.

Rich tones mark the colors on the Studebaker cars, one of which, a large touring car, is a bright red. The lower part of the body and the hood are black, with broad striping of red. The running gear is red with black striping. Black leather is employed in the upholstering. Another handsome Studebaker is a runabout with a rich emerald finish on the body, black striping and red leather upholstery. The black hood has brass hinges and a brass front.

An attractive color scheme is seen on a Locomobile with a yellowish green body, lightly striped with red. The chassis and running gear are red, striped with the color seen on the body.

Among the electric cars a Baker runabout is marked by the contrast between the dark blue body, striped with primrose and the primrose running gear striped with dark blue.

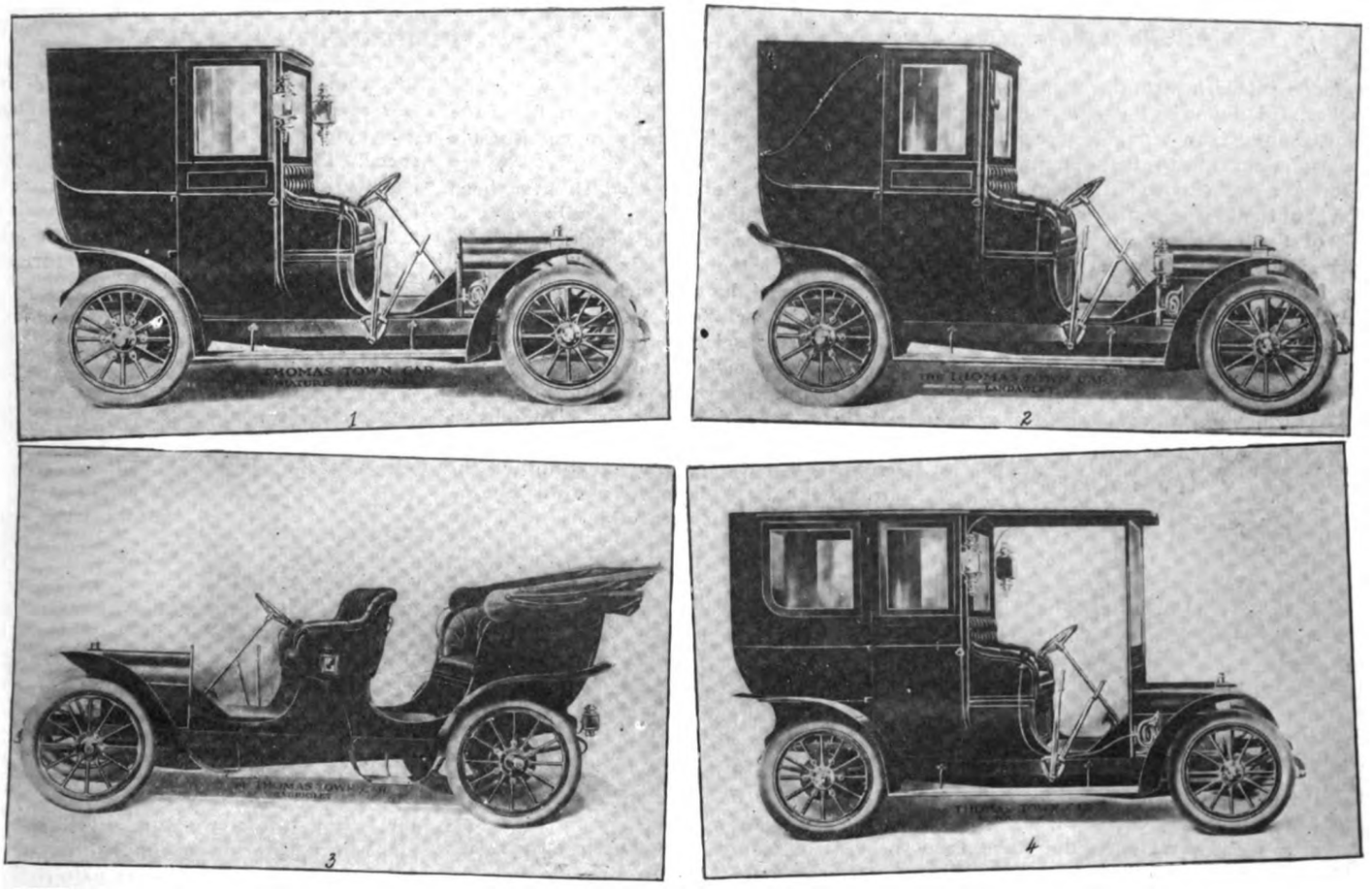
It has come to be generally accepted that the internal mechanism of the car now offers small room for startling improvement. Nevertheless several features are disclosed at the show which are worthy of being singled out, while a few others are of a more significant nature. Thus the use of the concentric type of valve on the Franklin motor is absolutely revolutionary in its effect, while the Haynes double fly wheel, advanced as an "answer to the six-cylinder argument" is fraught with far-reaching possibilities. The Winton self-starting gear proved to be unique, both as to purpose as well as in general simplicity and effectiveness, while incidentally the application of the double jet principle to the "puddle type" of carburetter, the first development along this line of a type which appears to be growing in popularity, also was distinctive.

The "bloc" type motor applied to the Thomas town car line, and which is made up of but two castings, practically speaking, is another feature of moment, while the construction of the remainder of the little chassis in itself is interesting in the extreme. The Columbia gasolene-electric system, though not absolutely new at this time, having been shown last year, yet proves interesting not alone because of its continued novelty, but because of the general improvement in the system as a whole brought about by the adoption of the new and excellently designed motor.

In a still more general way, the fact that three of the former exclusive adherents of air-cooling for motors now produce in addition to their regular lines cars which are closely parallels with them, but driven by water cooled motors, serves to draw attention anew to the subject of cooling and cooling systems, and incidentally gives Franklin, as the exclusive air cooler, an opportunity to point out that the auxiliary exhaust, as employed in the Franklin mo-

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tor is one of the big secrets of the air-cooled system. An apparent growth in the use of the shaft drive, the increased use of either full elliptic or platform suspensions in place of the formerly abundant and almost exclusive semi-elliptic pattern, draws attention to this matter, while sundry improvements in another way, focus attention on the braking problem and the new ideas which have developed within a twelve-month. The fact that in one or two instances wheel bases have been decreased, or weights lightened over those of last season, are doubly significant as indicating further convergence of types, and the working out of certain notions of design to their limiting values.



Four Forms of Thomas Town Cars.

THE THOMAS CARS.

For the 1908 season the Thomas product has been so enlarged that it may now be said to embrace three distinct lines, namely, the Thomas Flyers, which are made in four-cylinder 60 horsepower and six cylinder 70 horsepower types; the Thomas-Detroit, which is a 40 horsepower machine, and the Thomas town car line, which is based upon the new and very remarkable 18-20 horsepower chassis. The first two lines have undergone some little change since last year, the six-cylinder Flyer being an innovation at the present show. The town car chassis, with its various bodies, of course is placed on view for the first time.

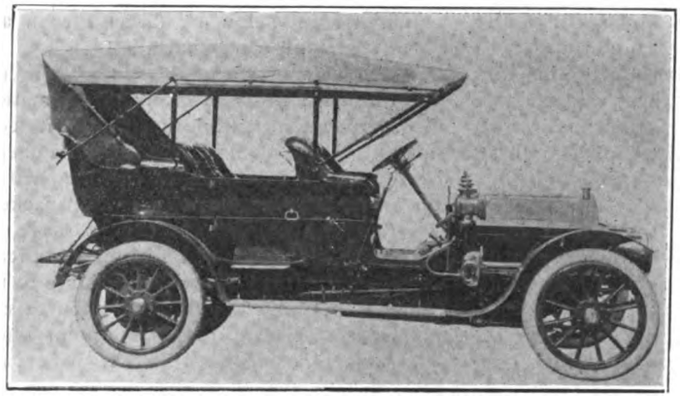
The specifications of the latter machine are: Wheel base, 100 inches; tire sizes, 32 by 4 inches, front and rear; transmission, selective gear change and propeller shaft; springs, semi-elliptical front, and full elliptical with scroll ends, rear; weight approximately 1,800 pounds. Its general lightness and low chassis level are noteworthy, especially since the compactness of the design permits the use of a low frame without material sacrifice of road clearance, the nominal height of the lowest point above the ground being 10 inches. The center of interest, however, is the motor, which is remarkable in the extreme.

With its four cylinders cast "en bloc," and containing not simply four cylinders together with their valve chambers and ports, but also the inlet and exhaust manifolds—the latter being cooled to some extent by the use of external radiating flanges—the economy of space is simply amazing, especially considering its cylinder dimensions, which are 3¼ by 4 5-16 inches, bore and stroke. The exhaust pipe is led out at the rear end of the cylinder casting, while the inlet pipe is coupled at the center of the block, and below the overhang of the valve chambers. Both sets of valves are placed on the left side of the group and are actuated from below by direct thrust, and from the single cam shaft..

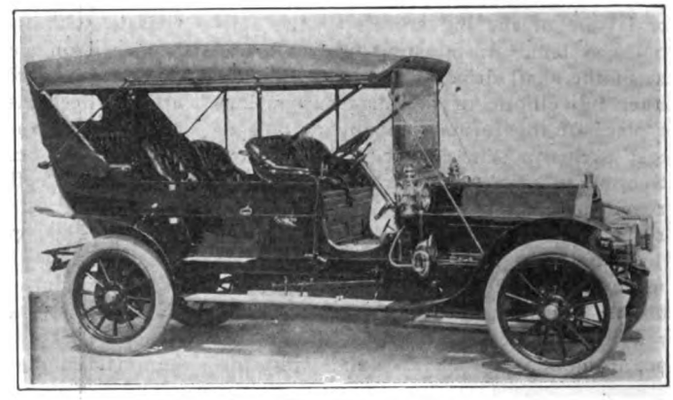
The lower portion of the motor, comprising the usual bed and crank pit formation, also performs a multiple function in its conduction of the cooling water, and housing of the carburetter mixing chamber within the water inlet port to the cylinder jackets. To this end an independent passage is cored out of the side of the crank case, leading from the front of the base casting to the junction between the third and fourth cylinders, from below. Just at the point where the joint is made between the base casting and the cylinder casting, this passage is enlarged, and is made to surround a small chamber which does duty as mixing chamber, and to which are connected the float chamber, as well as the short length of intake piping.

The crank and cam shafts run on annular ball bearings, one set mounted at either end of the base, serving in each case, these four bearings being the only ones in the entire motor. The only auxiliary, if the carburetter be accepted as integral with the motor itself, is the high tension magneto, which is driven by a spur gear from the two-to-one group at the forward end. The water connections, both to top and bottom of the radiator are very large, and circulation is by the thermo-syphon system. Fan blades

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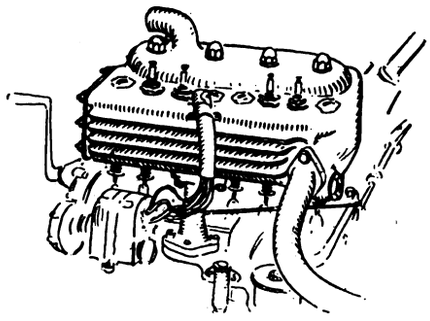
Four-Cylinder Pierce Great Arrow



Six-Cylinder Pierce Great Arrow.

are made integral with the fly wheel, this member also mounting the plain cone clutch.

The change gear group is mounted in a housing integral with the differential casing on the live rear axle, the torsion tube being unusually long, and supported just back of the clutch in a universal hanger, which also is adapted to receive the traction drag from the wheels. This important articulation, like those of the selective mechanism adjacent, is lubricated by force feed, one set of branched leads taking care



Thomas Town Car Motor.

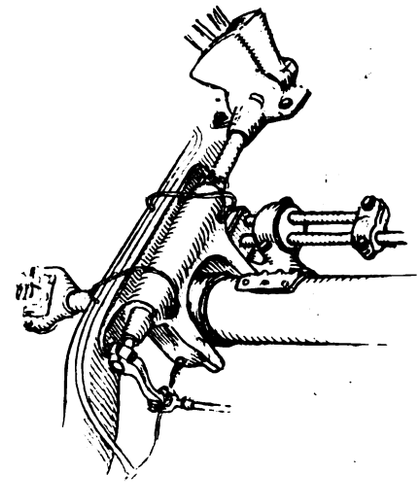
of all the bearings in the chassis which require frequent attention in this way.

The change gear affords three changes of speed with a direct drive on the high, its concentration on the rear axle, along with the brakes, making but two centres requiring attention, namely the motor in front, and the driving group in the rear. The frame is dropped from the rear axle behind, thus affording the very low normal chassis plane mentioned, and permitting the adoption of a wide variety of comfortable bodies.

Among the alterations which have been brought about in the more familiar cars of the Thomas line, may be mentioned the development of the new six cylinder Flyer, which has 5¾ by 5¾ inch cylinders, 137-inch wheel base, 36 by 4½ by 5 inch tires, front and rear, selective gearset, giving four speeds with double bevel drive, furnishing direct connection on both third and fourth relations, and is chain driven. The alterations in the four-cylinder Flyer comprise among other things, the adoption of the straight line type of body, a new form of radiator, straight dash, and the use of a suction fan in the fly wheel in addition to that mounted back of the radiator. The wheel base is now 128 inches, as against 118 inches last year.

The Thomas-Detroit cars also have been considerably improved, a new form of motor having been adopted, which has both valves on one side, worked by direct thrust from below, and with cylinder dimensions, 5 by 4¾ inches, bore and stroke. A new carburetter is in use, which has a water-jacketed mixing chamber; while such improvements as are embodied in an increase in the size of the water pump, and the adoption of a larger and stronger fan among others, tend to increase the running efficiency of the power plant.

The wheel base now is 112½ inches, and the wheel and tire sizes are 34 by 4, front and rear alike. The selective type change gear, affords three forward changes of speed. The use of larger springs and heavier steering knuckles, makes for easier riding, and the increase in the dimensions of the tonneau by 5 inches in length and 6 inches in breadth, conduces to creature com-

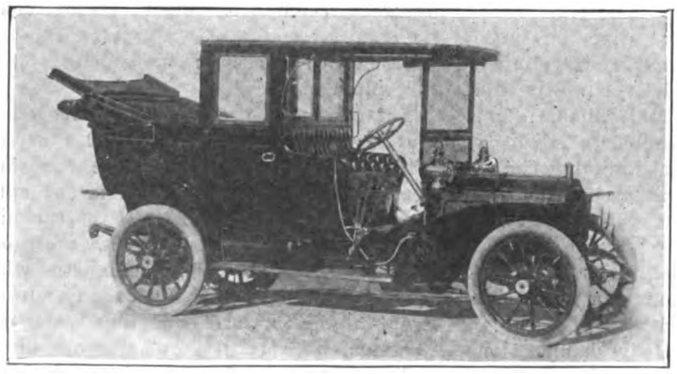


Torsion Group, Thomas Car.

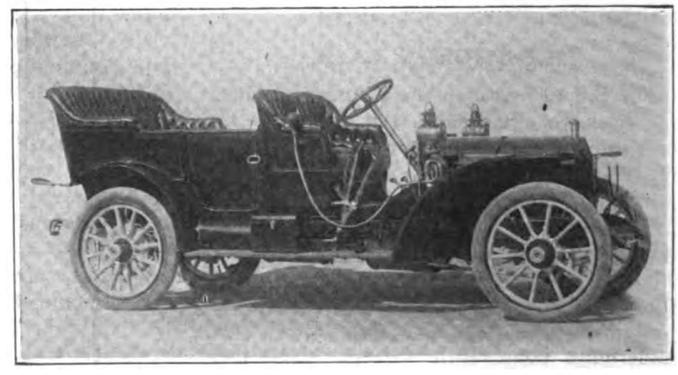
fort. Both the Detroit and Flyer cars are made in roadster or runabout forms as well as in the regular touring car pattern.

PIERCE GREAT ARROW.

Four distinct and different chassis models comprise the "tried and true" Pierce



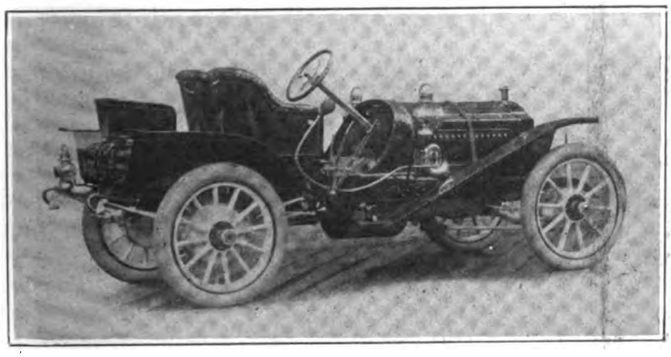
Packard "30" Landaulet.



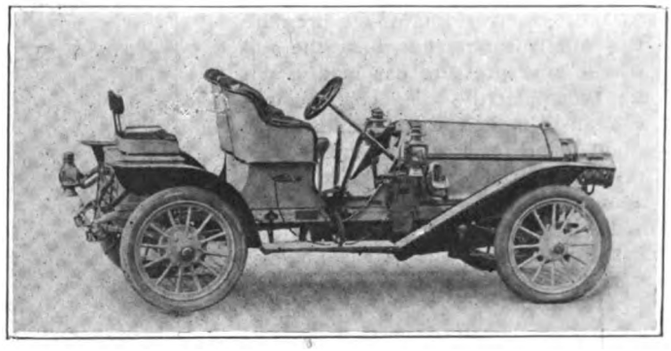
Packard "30" Touring Car.

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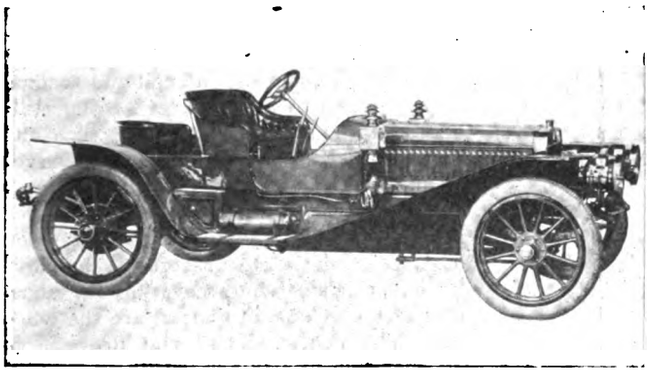
FOUR OF THE BIG RUNABOUTS AT THE SHOW.



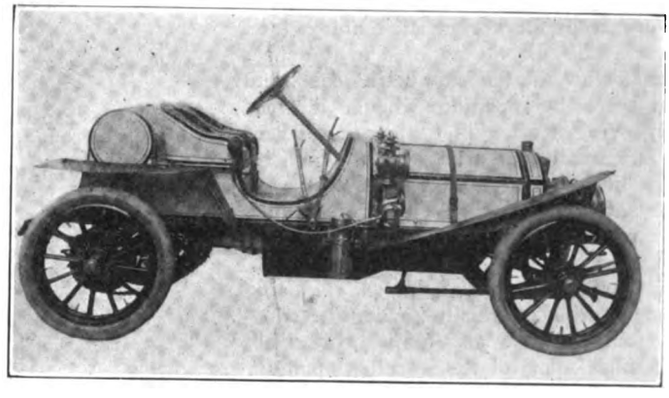
Packard.



Studebaker.



Winton.



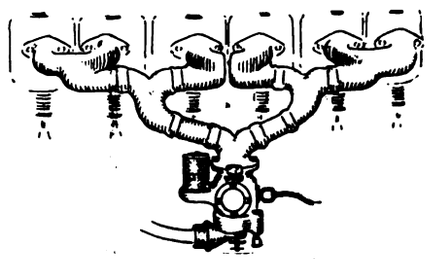
Apperson.

Great Arrow line, two being driven by four cylinder motors, and two by sextuple engines, one of the latter being a new model. The details of construction are very similar throughout the line, and as is the case with practically all standard cars of this type, there have been few alterations in structure, except in minor details.

Summarized, the specifications of the several types, each of which may be had either with closed or open bodies, are as follows: For the 30 horsepower, four-cylinder car, cylinders, 4¼ by 4¾ inches; wheel base, 112 inches; for the 40 horsepower four-cylinder cars, cylinders 5 by 5½ inches. wheel base, 124 inches; for the 40 horsepower six-cylinder car, cylinders 4¼ by 4¾ inches; wheel base, 130 inches; for the 60 horsepower, six-cylinder car, cylinders, 5 by 5½ inches; wheel base, 135 inches. The 6-40 type is a new model.

General features common to the line are the use of individually cast cylinders, double ignition by magneto and battery with two sets of spark plugs, oppositely disposed valves, actuated from below by direct thrust, auxiliary drives fully housed in every case, continuous flush lubrication by gravity feed from oil tank at side of cylinders to all bearings, including the crank pin journals, which are fed through ducts in the shaft. There is no sub frame, and the three-speed, direct-drive-on-high gearset is hung from cross members of the main frame. Transmission is through a leather faced cone clutch fitted with cork inserts, and by shaft to the live rear axle. The external-internal brakes on the rear wheels are equalized by beams extending the full width of the chassis and applied by center pull.

As already indicated, the alterations—refinements probably is the better word—found necessary have been few and apparently insignificant. They include, by way of illustration, the use of a new type of auxiliary air intake valve on the carburetter, which somewhat resembles in form, the reed of a common motor horn, the engine suction serving to lift the tongue in proportion



Intake Manifold, Pierce Great Arrow.

to the demand for extra air. Two of these valves are employed, one acting at medium motor speeds, and the other at high speeds. The construction is such that for all ranges of service, any tendency to whistling in the carburetter is completely overcome. A compensating adjustment on the valve lifters is another improvement of a simple but important nature, which further exemplifies the almost absurd simplicity of the alterations which are now deemed requisite from year to year.

WINTON SIX-TEEN-SIX.

As the only car exhibited by a maker devoting himself exclusively to the six cylinder product, as well as by reason of a number of unique features peculiar to itself, the Winton cars with their rather cryptic appelation, "Six-Teen-Six," were practically certain to command attention; and they have not failed to do so, and deservedly so. The Six-Teen-Six, besides being entirely new is of general and particularly interest because of the self-starting gear with which it is equipped—a feature long sought for and much to be desired.

This consists of nothing more complicated than a distributing valve driven from the cam shaft and timed with it to open a port corresponding to each cylinder at the firing point only. Leads from the delivery side of the valve, which is of simple disc form, connect with the cylinders, while a supply pipe connects the valve with a storage tank under the left side of the chassis. A check valve on the forward cylinder, set to open at 90 pounds, serves to collect a small proportion of the cylinder contents during the firing stroke, and to pass them on to the tank, where a considerable volume of gas may thus be accumulated. When it is desired to start the motor, simply depressing a push-button on the dash, suffices to direct the compressed air and gas into the distributing valve which, in turn, auto-

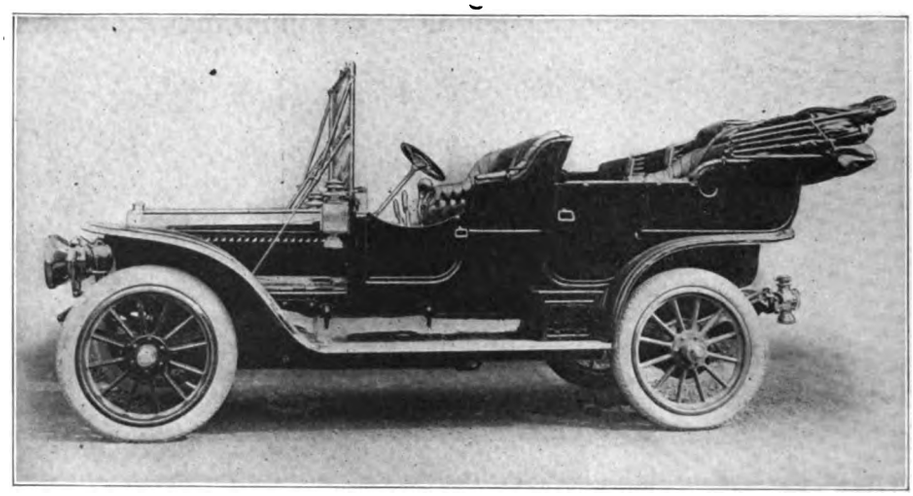
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matically selects the proper cylinder, and introduces the gas into it. The gas already compressed in the cylinder from previous running thus receives additional pressure from the supply tank, and when the full force of the tank pressure has made itself felt, the accumulated pressure becomes great enough to move the piston, when, the firing point being reached, the first ignition takes place, and from this artificial impluse the regular cycle of operation is at once instituted. The starter is always in gear and always ready for use. Its simplicity, moreover, affords it a strong recommendation.

An important point in connection with the lubricating system proves to be the means by which all surplus oil is returned from the crank pit to the supply chamber of the pressure feed oiler regularly employed on the car. The oiler is mounted in the chassis just below the left side of the dash, and in an accessible position, whence it feeds nearly every bearing in the car. Adjacent to it is a small gear driven pump which removes oil from the crank pit as fast as it accumulates, and returns it through suitable strainers, to the oiler to be used over again.

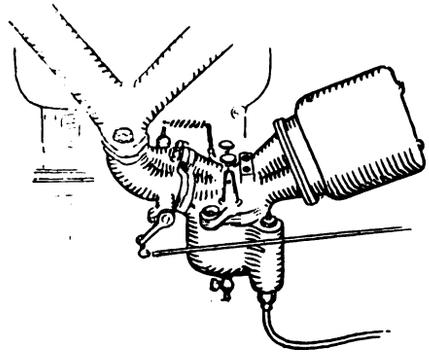
The carburetter also is unique in being provided with a muffler to deaden the whistling sound of the air intake. Like last year's model, it is of the so-called "puddle" type, in which the air supply is drawn in constant volume over a plain orifice at the base of a U-tube which is slightly submerged below the fuel level of the float chamber. This year's type, adds to the simple device thus formed, a second U-tube of smaller size and a compensating throttle arrangement whereby at low speeds and small throttle opening, the smaller tube only is in action, while for higher engine speeds the second is brought into play, the pair working together in producing the requisite mixture.

The Six-Teen-Six specifications may be be quoted briefly in this way: Cylinder dimensions, 4½ by 5 inches; 48:6 horsepower; wheel base, 120 inches; tires, and wheels,



Winton Six-Teen-Six.

36 by 4½ inches, all around; transmission by multiple disc clutch having 65 members; three-speed selective gearset, shaft drive, and floating type axle; both rear and front



Winton Carburetter.

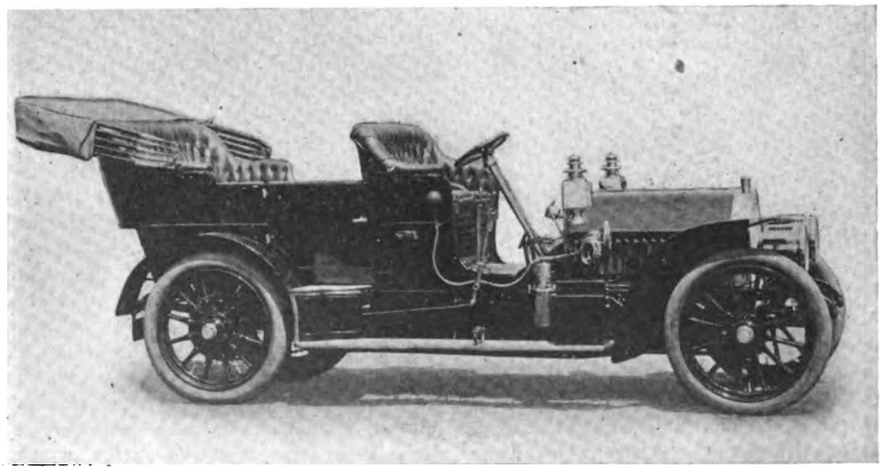
axles being mounted on Timken roller bearings.

ROYAL TOURIST.

The most striking feature in connection with the motor equipment of the Royal Tourist, is, as was the case last year, the use of double ignition, comprising the Bosch high tension magneto, and coil and accumulator, applied to a single set of plugs, the distributing arrangements being such that the coil is thrown entirely out of service when the magneto is cut in. This feature is retained absolutely without change; indeed, minor refinements only have been found possible in the whole structure of the car.

The principal points covering the structure of the vehicle in general are the wheel base, 114 inches; wheels and tires, 36 by 4½ inches, front and rear, shaft drive; three speed change gear system. The motor, which is rated at 45 horsepower, measures 5 by 5½ inches, bore and stroke, has cylinders cast in pairs, with integral jackets, centrifugal pump, cam and magneto gears fully housed, and interchangeable valves arranged on opposite sides of the motor.

Of the comparatively few alterations which are to be found in the 1908 model, the adoption of the semi-platform type of spring in the rear, together with the semi-elliptic type in front, and formerly used all around, stands out most conspicuously. Besides this the tire sizes have been increased from 34 by 4 inches to their present dimensions, while slight modifications —almost too unimportant to notice, have been made in the steering gear, hubs, radius rods and general arrangement of the rear axle group.



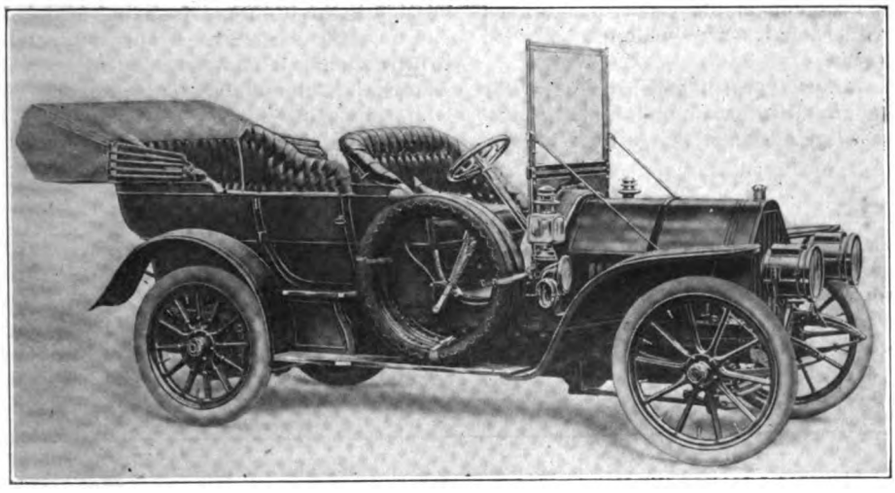
Type I Standard Locomobile.

POPE TOLEDO.

In the Pope-Toledo, than which no car is more impressive, a sufficient number of alterations have been brought about to materially alter its action in several ways. Two chassis are built at the present time, the chief distinction between them being the length of wheel base, which is 115 and 126 inches, respectively, and such difference in position of motors and steering gears as the requirements of the runabout and touring types of body demand. The bodies used are newly designed, and combine with stability of line a high degree of artistic effect.

As for the principle difference in the mechanism which distinguish the models of

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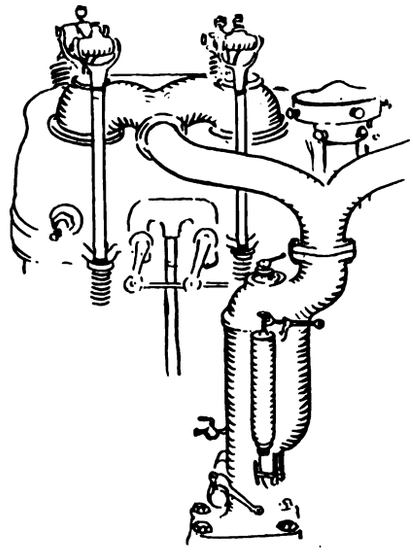


Pope-Toledo, Type XVI.

1908 and 1907, while the weight of the motor has not been increased, a number of changes have been made. Thus, while the jacket capacity has been increased, the design of the cylinder heads has been altered and simplified to lighten them somewhat. Double ignition is now fitted, the system being one of complete duplication, the Eiseman high tension magneto being supplemented by a quadruple coil, timer, battery and independent spark plugs. One of the comparatively minor refinements is the use of manifolds and drain pipes leading from the pet cocks on the cylinder walls to the pan beneath the crank case, thus leading away all oil and soot from the combustion chambers, and leaving the motor clean at all times.

A new carburetter of the concentric float, vertical pattern is employed, one of its original features being the adoption of a gas adjusting valve, regulating the quality of the mixture, and adjustable from the driver's seat by the manipulation of a small handle on the dash. The crank shaft is mounted on three annular bearings, and the entire interior of the engine is lubricated by an original and improved form of self-adjusting, constant level splash distribution. To this end, the crank base is divided laterally into two compartments, the upper forming the crank pit proper, while the lower serves as a sump and storage compartment for the reserve supply of lubricant. From the sump a small pump feeds the oil into the crank case, overflow pipes returning the surplus to the lower compartment as fast as the level rises beyond the proper point. In this way a constant level is maintained at all times, irrespective of local conditions. The splash into the lower sides of the pistons is prevented from flowing directly back into the crank pit by a flange cast inwardly upon the lower end of the shell, a small amount of oil thus being gathered and retained until distributed over the cylinder walls through several small holes drilled outwardly through the shell.

The master clutch, which has been lightened and strengthened at the same time, by the adoption of improved metals and the readjustment of the wearing surfaces, has



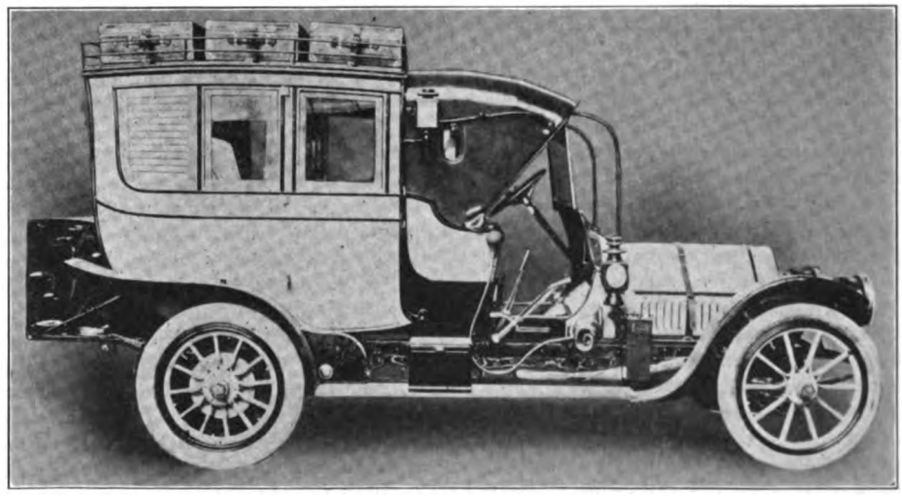
Pope-Toledo Carburetter.

33 discs in all, 17 of which are "dead" and turn with the engine shaft, the balance being keyed to the driven member. The change gearing, which is of the selective type, as has been the case hitherto, is mounted on five annular bearings. It is arranged to give a direct driving connection on the third speed, the fourth being geared up considerably nearer to the speed of the engine. As was the case with the previous model, the differential and countershaft group is mounted considerably to the rear of the gear case, the final drive being by double chain with the necessary reduction divided evenly between the bevels and chains. A new feature in this connection, is the use of leather chain guards, which completely protect those members from dust and dirt.

The mechanism of control comprises in addition to the motor controlling levers on the steering wheel, a foot accelerator, the unusual pair of side levers, and three pedals, one of which sets the rear wheel expanding brakes, also throwing out the clutch, the second actuating the clutch alone, while the third operates the countershaft brake, which is entirely independent of the clutch controlling device. The use of blued steel instead of polished finish in a number of parts is not the least of the noteworthy innovations.

MATHESON.

The sturdy and powerful characteristics of the Matheson car, due in part to the generally massive design of the machine, and in part to its original construction in several noteworthy points, have been further increased in the latest chassis, by the adoption of several improvements which, though few in number, are significant in detail. The specifications of this machine may be summarized thus: Bore and stroke of motor, 6 by 5 inches, the excess of bore over stroke being a Matheson asset in which no small value is placed; nominal power, 50; multiple disc clutch; change gear, selective type affording four forward speeds through a double bevel system, with direct drive to counter shaft on the fourth; double chain transmission to wheels; four brakes, one pair on



Pope-Hartford Touring Coach.

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counter shaft, mounted at either end and applied by pedal, and the other expanding into drums on the rear wheels.

The peculiar construction of the valve and ignition mechanism which has been a feature of the car hitherto, is continued practically unchanged except that the single cam shaft is now driven through spiral gears, from a vertical, instead of an inclined shaft, the mechanism being entirely housed, and possessing means of adjustment to compensate for wear. In the ignition mechanism, small change has been made, the feature of a removable fixed electrode in the make and break sparker, which may be taken out without disturbing the hammer, against dropping in the event of a broken arm, while a quicker reduction is afforded in the gear.

The various types of body suited to this machine are all of broad and ample proportions, and are designed along stable lines.

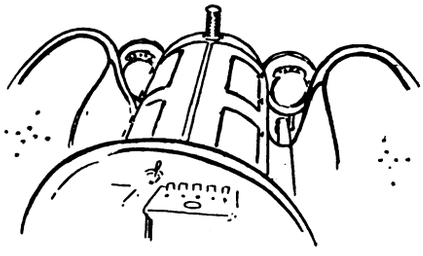
AUTOCAR.

The Autocar chassis common to the limousine, touring car and roadster, is to the forefront in the space of the Autocar Co., of Ardmore, Pa. It mounts a 30 horsepower motor and is gay in whites and reds of special show chassis finish, with generous dashes of blued steel. The motor, base, fly wheel and transmission are contained in a unit case supported at three points, doing away with subframe construction, The two forward points are bolted direct to the frame, and the third, under the transmission, is bolted to a cross member of the frame. A generous torsion rod for the shaft drive is provided but no distance rods, the rear springs taking the forward push. The motor, as in previous models has the inlet valves in the center of the cylinder heads, and double acting push rods for the valves make but one rod necessary to a cylinder. The cylinders are separate, 4¼ by 4½ inch, with integral water jackets. The clutch is of the floating ring fly wheel type as in previous years, a metal faced ring binding over the metal periphery of the fly wheel for engagement. The transmission is the progressive sliding gear type. No unusual departures from conventional construction are apparent, but the unique Autocar system of throttle and spark control from grips in the rim of the steering wheel is retained.

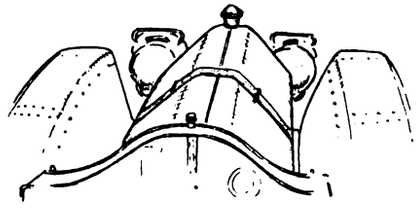
WALTER.

The Walter car is of 40 horsepower, its four cylinder motor dimensions being 5 by 5½ inches; double high tension ignition by battery and Eiseman magneto; cone clutch; selective type change gear giving three forward speeds with direct drive on the third; shaft drive; brakes on drive shaft and on rear wheels. Contrary to usual practices, the right hand member of the two foot pedals releases the clutch, the left pedal applying the full set of brakes simultaneously. The emergency brake lever applies the rear wheel brakes without releasing the clutch. The wheel base is 120 inches, or 4 inches less than that of last year; the wheels are 36 inches diameter, shod with 4 and 5-inch tires, front and rear; the weight of the touring cars is 3,200 pounds.

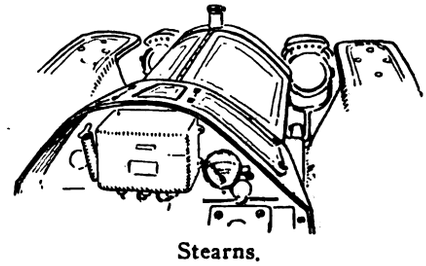
The motor used this year is materially different from that employed hitherto, the valves being placed on the left side of the motor and actuated from below, instead of being placed in the heads, as previously was the case; the carburetter is now placed on the right side, the intake pipe leading



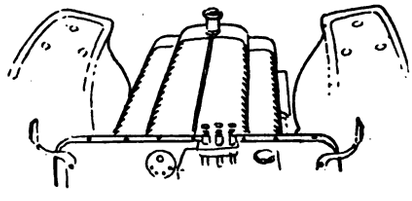
Royal.



Pope-Toledo.

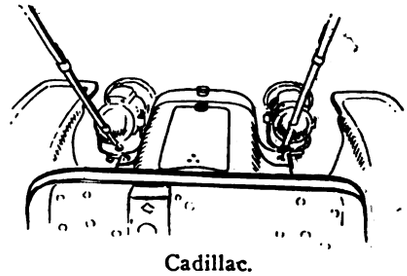


Stearns.

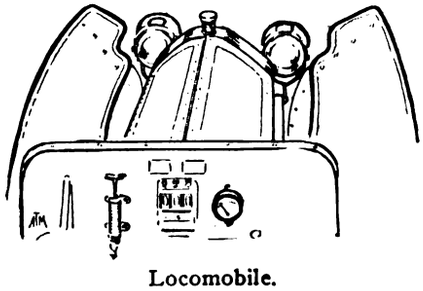


Thomas.

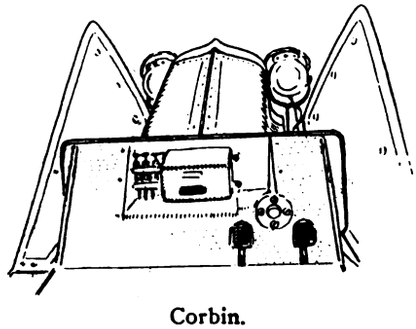
CARS AS VIEWED FROM THE DRIVER'S SEAT.



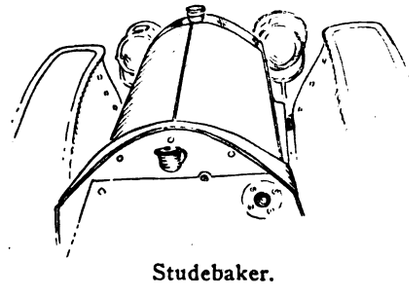
Cadillac.



Locomobile.



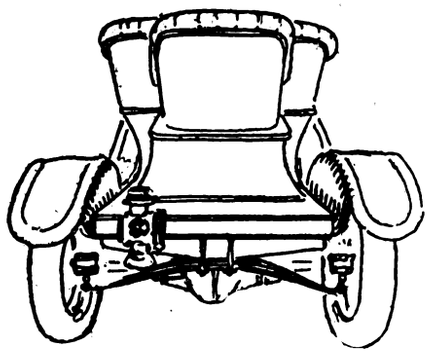
Corbin.



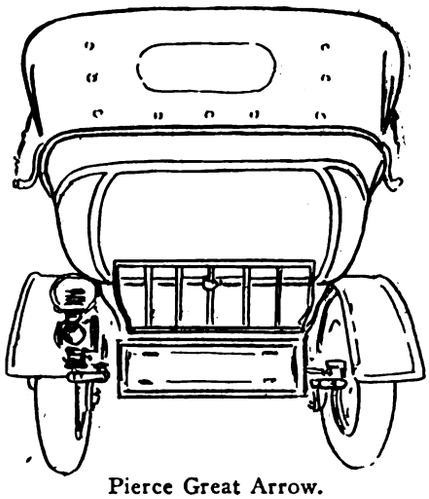
Studebaker.

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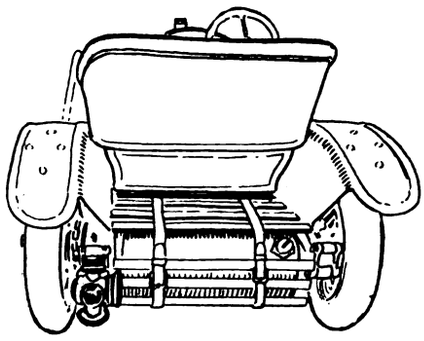
over to the left side of the cylinder group for delivery. The rear axle group also has been redesigned, a torque rod having been installed in place of the torsion tube used before, the double shackling of the semi-elliptical rear springs necessitating the use of radius rods under the frame sills, these horizontal opposed, water cooled motor set well back in the frame, and driven by double chains through an improved form of friction change gearing. This chassis, which is made in 102 and 92-inch wheel base according to the type of body to be mounted, is otherwise practically the same in each of rise to a curious result, the false radiator at the front having no connection with the main cooler other than as a hood for catching the air. The under pan runs clear forward in this model, and thus the space enclosed beneath the bonnet between the front and the radiator proper is entirely barren



Elmore.

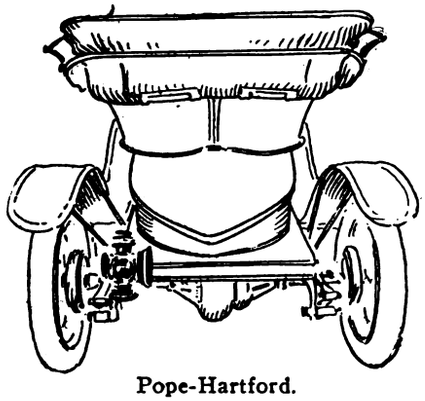


Pierce Great Arrow.

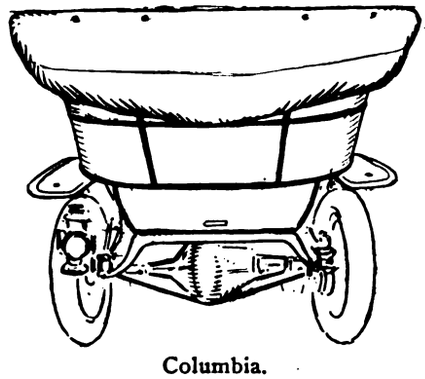


Stearns.

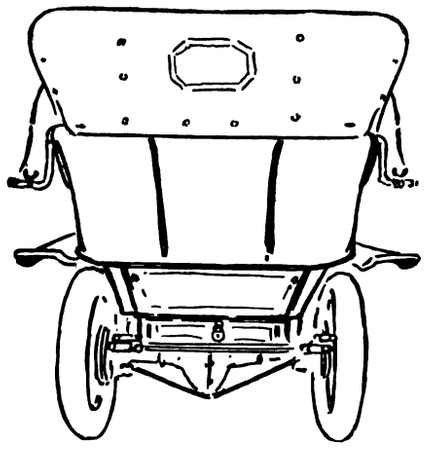
CARS AS VIEWED FROM THE REAR.



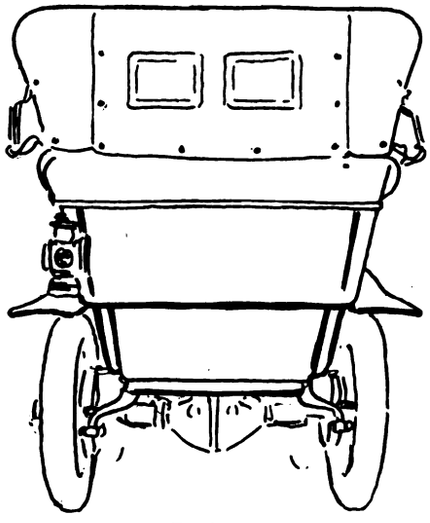
Pope-Hartford.



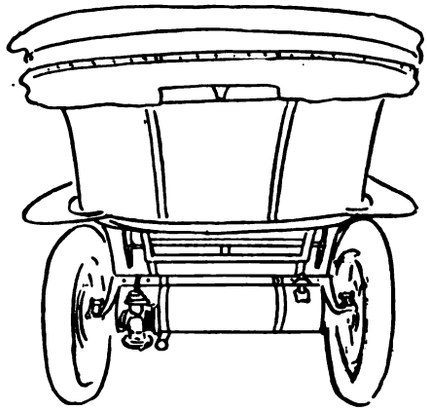
Columbia.



Haynes.



Packard.



Matheson.

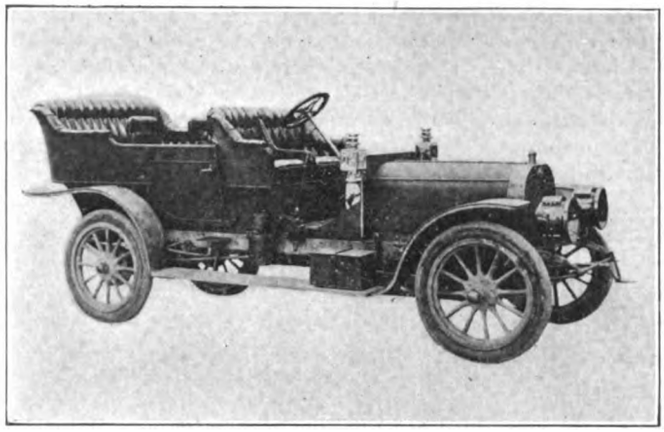
members being affixed to collars riding loosely on the ends of the axle tube. Two conventional types of body are mounted on the chassis with comparatively slight alteration, both the limousine and touring types being of ample proportions.

WALTHAM.

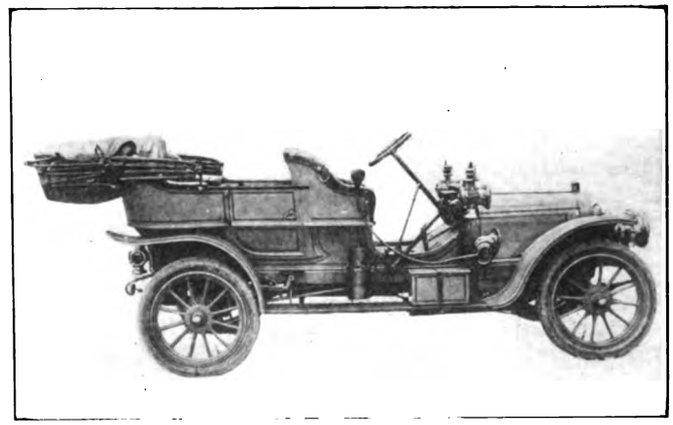
The chief feature of the Waltham-Orient line is the new 14 horsepower chassis with the types presented, which comprise a runabout and a roadster, as well as a democrat wagon, which is suitable for commercial purposes and carries a removable rear seat secured to a stout box body of the express type. In each of the machines the radiator is set well to the rear and very low down, the under side of the motor and its mechanism being housed in by a substantial under pan. In the roadster, this practice gives of any paraphernalia, mechanical or otherwise, for some four feet of its length.

The change gear, embodies an ingenious modification of the ordinary double disc form whereby the highest speed ratio is obtained without the slight slippage across the tread which obtains in the ordinary relation. To this end, the two discs which comprise the group are bevelled, and roll together bevel to bevel at high speed, occu-

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60 H. P. Haynes U.



40 H. P. Haynes W.

pying the exact relation of bevel gears rolling on their pitch surfaces. The method of control is, as heretofore, by pedal and lever.

CORBIN.

In the Corbin line is presented the paralleling of both air and water cooled types throughout the complete list of cars manufactured—with one exception. The water cooled Corbin motor is an innovation this year, and is produced, as the Corbin people explain, entirely out of deference to popular sentiment, which even yet is somewhat inclined at times to question the reliability of the air cooled principle. The fact that the Corbin company have absolute faith in air cooling, as well as in their own solution of the problem, is proved by the facts that the air cooled line is continued with few changes of detail, and that the price of the air cooled product is kept slightly above that of the newer type. Except for the motor, the chassis are essentially the same in both cases, while it may be said that the motors are the same except for the single feature of the method of cooling.

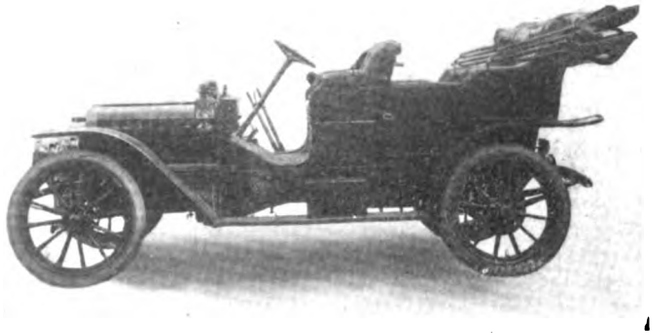
The touring car, runabout—a brand new body design with four bucket seats, high backed, and shaped with wings to give a distinctive appearance—a limousine—built only to order—and the "Comet," comprise the line. The latter machine, which is entirely new as to body, though mounted on the standard type air cooled chassis, altered somewhat to suit conditions, is a semi-racer of the most approved pattern, with seat set well back on the frame, leaving an extraordinarily long foot board space in front, cylindrical fuel tank cradled immediately in the rear of the seat, and rounded storage boot beneath. But however much its appearance might serve to draw attention, the novel guarantee under which it is sold, and which supplies it with the catch phrase, "$50 a mile," goes even further in advertising its merits. As it is explained, the machine is sold under a guaranteed speed capacity of 60 miles an hour. If under suitable test it fails to come up to that minimum, the makers agree to deduct from the selling price a sum amounting to $50 for every mile per hour of deficiency. This "anti-come-back" method of marketing, at once inspires absolute confidence in the car, and removes all question as to the good faith under which the guarantee is made.

The Corbin specifications briefly are as follows: Motor, four cylinder vertical, air or water cooled, cylinders 4½ by 4¼ inches bore and stroke, this being an increase of a quarter inch in bore over the cylinders used hitherto; three speed, selective type change gear; shaft drive; wheel base 108 inches; weight 2,200 pounds; tires 34 by 3½ and 34 by 4. The springs are 40 and 50 inches long, front and back, semi-elliptical, and 2 and 2¼ inches wide. Annular ball bearings are used throughout the car excepting only the intermediate crank bearing, and the cam shaft supports.

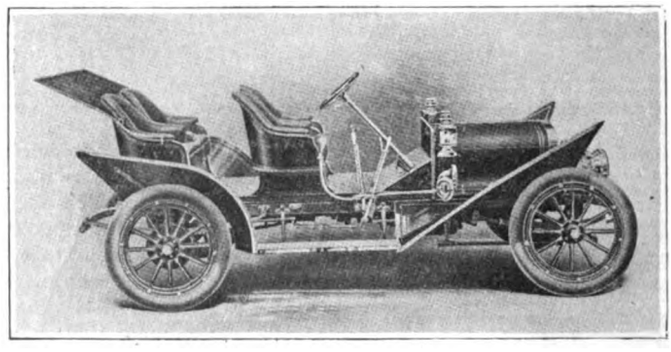
STUDEBAKER.

In addition to the two previous models of Studebaker gasolene cars, the name this season is carried in a third model of generally heavier specifications and somewhat greater stability as is required by its greater weight and capacity. This machine is driven by a 40 horsepower motor, while the other two are propelled by 30 horsepower plants. The cars are known as models B, A, and H, respectively, and while belonging to the same class of design, they possess several point of difference outside the variations in sizes of parts. Thus the heavier and most recent model has a selective type change gear affording four changes of forward speed with direct drive on the third, and cone clutch with cork inserts, while the smaller cars have progressive gear sets with plain cone clutches of the more familiar type, giving but three speeds. Each type may be had with the usual variations in body construction, those on view at the show being touring cars on the models A and B chassis, and a runabout and limousine on the Model B chassis.

Features which are common to the line may be thus enumerated: Cold rolled,



Corbin, Model S, Water Cooled.



Corbin, Model R, Air Cooled.

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pressed steel frame, aluminum under pan; wheels, 34 inches diameter; external-internal type brakes on rear wheels; I-beam section drop forged front axles, clutch driven rear members; ball bearings on front axle and throughout rear axle, connecting rod bearings of special white bronze, wrist pin bearings of hardened and ground steel. The cylinder dimensions of the B model are, 4¾ by 5¼ inches, the output being 36 horsepower, by the A. L. A. M. formula, and 40, according to nominal rating; the smaller motor, which is rated at 30 horsepower nominal, and 27.2, A. L. A. M. method, has cylinders 4⅛ by 5¼ inches, bore and stroke. The wheel bases are respectively 114 and 104 inches, and the tire sizes are 4½ inches front and rear, and 4 inches front and rear, except in the case of the A type closed cars, when 4½ inches rear tires are employed.

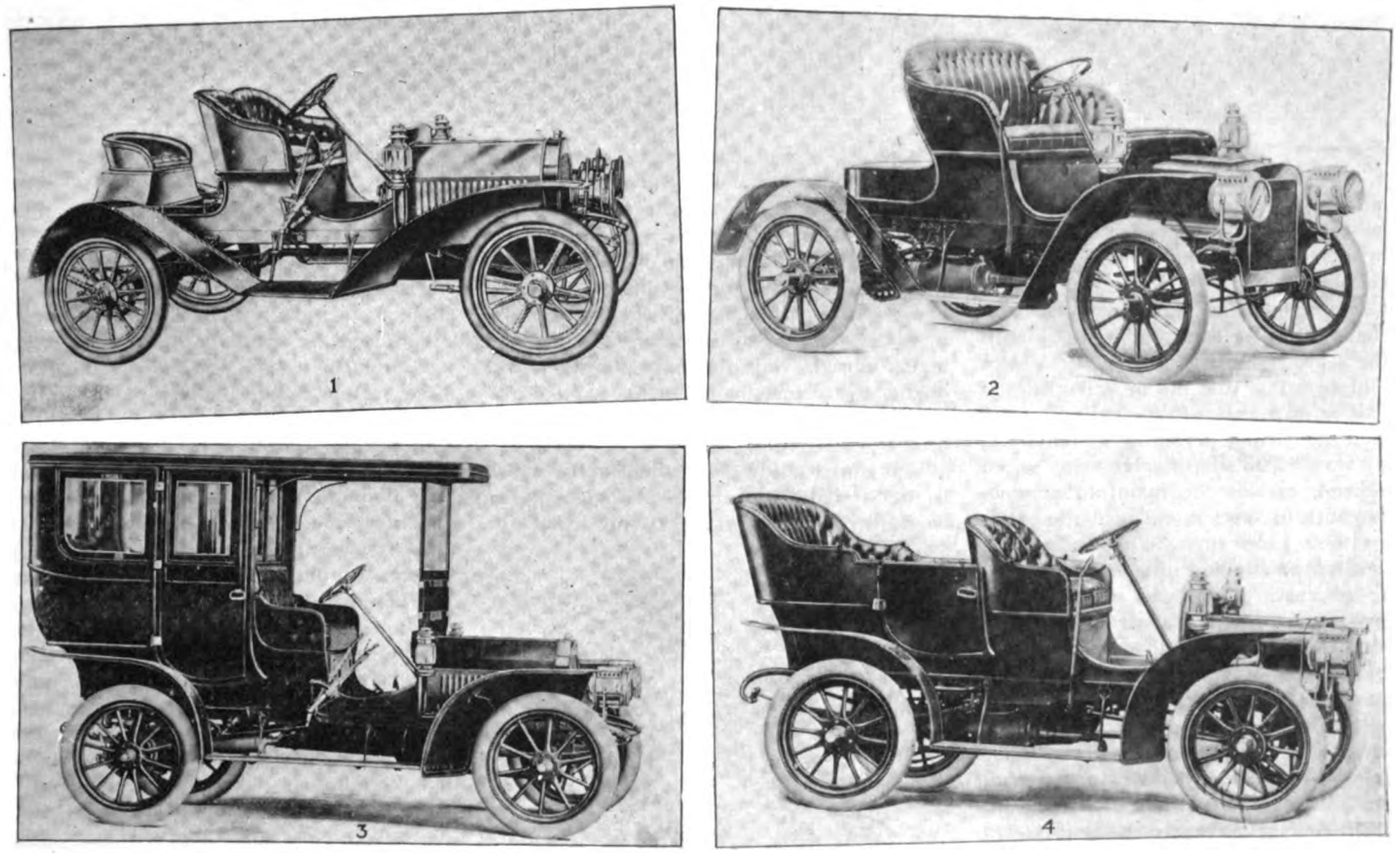
Some little variation also is shown in the method of suspending the chassis, the A and B types having three-quarter platform springs in the rear and semi-elliptical in front, while the H type has semi-elliptical springs all around. Some slight differences in the detail method of hanging the springs to the frames and axles also are observable, but they are of comparatively minor importance. The four complete vehicles and polished chassis shown in this connection comprised one-third of what is said to be the largest individual exhibit in the Garden.

CADILLAC.

The adoption of the A. L. A. M. rating formula has proved something of a revelation in the case of the four-cylinder Cadillac cars, and delevoped the fact that the 20 horsepower nominal figure applied to the Model G type which was brought out for the first time last year, was far too low. The 1908 rating therefore, has been raised to 25 horsepower, according to the system which is being used by quite a number of makers, and that without any change being required in size or construction of the motor itself. As has been the case for several years, the famous single cylinder car continues to hold no inconspicuous place in the Cadillac family; its appearance this year in somewhat altered body adds not a little to its appearance.

Three types of chassis are the basis of the line, an unusual variety of body equipments, particularly in the case of the small car, serving to amplify the choice thus offered the purchaser to a degree which should brook no lack of satisfaction on that particular score. The specifications of the smallest chassis include: Motor, rated at 10 horsepower; cylinder, 5 by 5 inches, bore and stroke, horizontal type; change gear planetary; drive, single chain; tire sizes, 30 by 3, or 30 by 3½, according to body; springs, transverse, semi-elliptical in front, semi-elliptical rear. Of Model G, the characteristics are: Motor, 4 by 4½ inches, bore and stroke; cylinders copper jacketed; original selective type change gear, affording three forward speed changes; drive, cardan shaft; wheel base 100 inches; tires, 32 by 3½ or 32 by 4 inches, according to body. The large car, Model H, has a 30 horsepower motor, with cylinders, 4⅜ by 5 inches, bore and stroke; change gear, original type of planetary gear affording three forward speed changes; drive by cardan shaft; wheel base 103 inches; tires, 34 by 4 inches, or 34 by 4½ inches, according to body.

As already indicated, there have been comparatively few changes in the constructional details of any of the cars. In all three types, new styles of body have been developed, while in the case of the Model S, the little machine, the wheel base has been increased, while running boards and new and improved types of fenders have been installed, thus altering the appearance of the machine not a little.

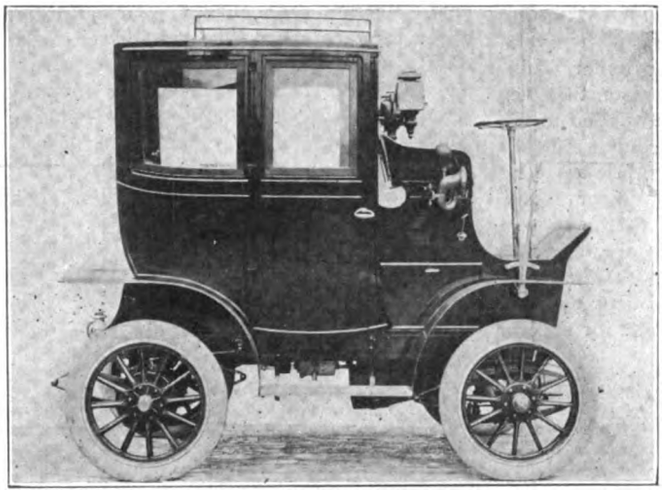


Four of the Cadillacs.

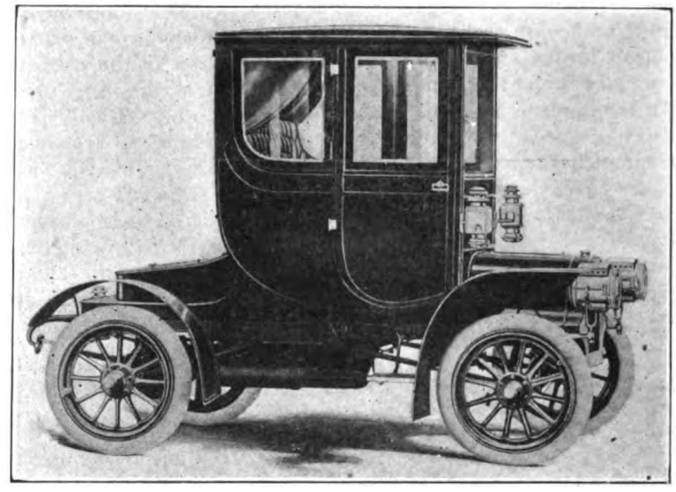
FRANKLIN.

Undoubtedly the mechanical feature of the Franklin exhibit is the new cylinder construction involving the use of hemispherical heads and concentric valves. By this means, as well as by virtue of other and less noticeable changes, a slight increase in dimensions, among them, the power of the motors, has been increased to such an extent that the quadruple type, formely

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Franklin Cab.



Cadillac Coupe.

rated at 12 horsepower, now is rated at 16; the four-cylinder 20 horsepower motor, has been raised to 28, and the 30 horsepower to 42, in rating.

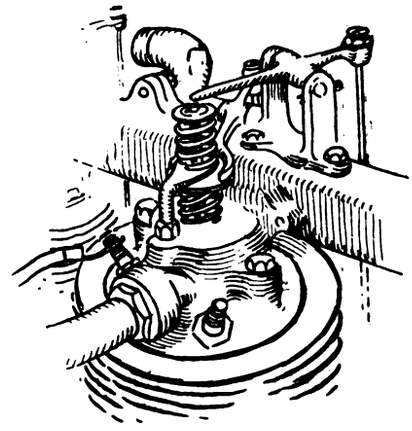
The arrangement of the new valve permits the casting of the cylinder in identically the same fashion as though there were but a single valve, the line of valve motion being along the axis of the cylinder, and that member being perfectly symmetrical in every way. The single valve cage bolted to the head, carries the manifold connections for both intake and exhaust, the cylinder ports being concentric. The inlet takes the form of an annular opening surrounding the exhaust. The main valve seat in the head carries the inlet valve, which, instead of being a plain mushroom, is a hollow sleeve with a conical flange at its lower end, shaped at the proper angle to take the seat, and drawn in above to a rather substantial stem which is fitted with a collar and spring outside the cylinder, in the usual manner, and is actuated by a walking beam and push rod contrivance from the cam shaft on the left side of the engine base. A long guide for the exhaust valve stem also is fitted into the inlet member.

Seated within the conical flange of the inlet is the exhaust valve, which is of the ordinary mushroom pattern and smaller than is customary—this being made possible by the use of the auxiliary exhaust ports in the cylinder walls at the lower end of piston travel, which are controlled by independent valves, and are calculated to carry away some 70 per cent. of the burnt charge before the main exhaust is opened.

The stem of the main exhaust valve passes up through the hollow opening in the stem of the inlet valve, is topped by the usual collar and spring, the latter resting on a fork surrounding the inlet stem, and mounted on the cylinder head, and being actuated by a second beam and push rod, similar to the first.

As a result of this arrangement, when the inlet gear is actuated by its cam, both valves move together, the inlet passage being opened but the exhaust remaining closed to the cylinder, while the cylindrical body of the inlet valve, isolates the inlet and exhaust ports. When the exhaust gear is operated, on the other hand, the inlet remains closed, while the exhaust valve alone opens, the refuse gases being passed into the exhaust manifold through the interior of the inlet sleeve.

The construction of the inlet valve which is the vital portion of the arrangement has been worked out with extreme care, the



Franklin Concentric Valve Gear.

walls being very thin, to reduce expansion as far as possible, the metal used being a form of chrome nickel steel, which is worked down from the bar, hardened and ground. Under test, this part is stated to have withstood successfully a number of impacts equivalent to those involved in five years of continuous average service on the car. The trial was carried out on an impact machine especially designed for the purpose.

The cylinder dimensions of three types of motors enumerated above are, respectively, 3¼ by 3¼ inches, 4¼ by 4 inches, and 4¼ by 4, the latter being applied to six instead of four cylinders, as in the other two instances. The three types of chassis produced are known as G, D, and H, the first being delivered with runabout or touring body, the second with runabout, touring car or landaulet, and the third with runabout, touring car or limousine bodies. They are mounted on 90, 105, and 127 inch wheel base, respectively, the tire sizes ranging from 30 by 3 by 3½ inches to 34 by 4 by 4½ inches, according to type and style of body. All springs are full elliptic, brakes are mounted on the driving shaft and on the rear wheels, and the change gears are selectively actuated on the two larger types of chassis, but are of the progressive type on the smallest. Multiple disc clutches are used, and the control is standard in respect to the application of pedals and levers.

A newcomer in the line is the Franklin taxicab, which is mounted on the truck chassis, driven by the 16 horsepower motor with worm driving gear on the rear axle, but modified to a certain extent, mainly as regards the suspension, this being similar to that employed on the medium weight touring car. The body of this neat little vehicle is of the cab type and occupies the entire length of the chassis back of the motor space, the latter being completely housed by the front of the body. The driver's seat is raised above to a commanding elevation, and is located at the extreme front of the car. Barring the grilled opening in front of the motor, which serves as intake for the cooling air, there is little in the general appearance of the machine to differentiate it from the electric cabs of common city service, excepting only its weight, which is evidently very low.

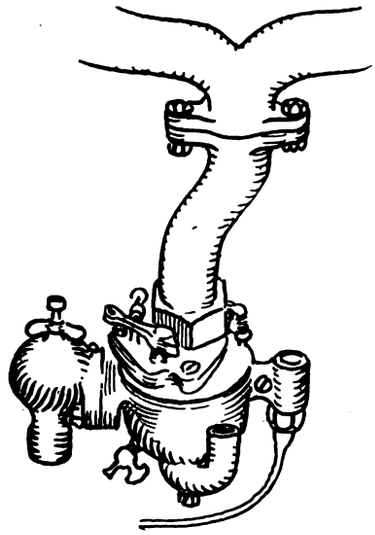
SELDEN.

One of the newcomers at the show, and one which, bearing the name of the now famous patentee, is interesting from that fact, if for no other reason, is the Selden, which appears in two models, of 25 and 45 horsepower, respectively. Both types are of uniform and apparently

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excellent construction, and both involve more or less originality, without in the least diverging from current practice in general respects. The larger and heavier car in particular, reveals a number of original features.

Among the specifications of this machine may be mentioned the cylinder dimensions, which are 5¼ by 6 inches, and the wheel base, 123 inches. The motor is of the T-head type, with oppositely disposed valves worked by direct thrust from below. Double ignition of the high tension type is employed, with two sets of plugs in the cylinder heads. An original form of carburetter is used with this motor, and is of unusually simple and compact construction.



Schebler Carburetter on "Selden Courier."

It may be described briefly as being of the concentric float type, and of plain cylindrical exterior contour. Within, and and above the float chamber, is a plunger or piston valve, seated at the base of the mixing chamber by gravity alone, and capable of entirely closing the air inlet when seated, the air being taken in through the base by way of an annular port surrounding the jet tube. The air rising up past the jet lifts the fuel in the usual way in a straight path to the engine manifold directly above, a gauze screen through which it must pass in entering the two branches of the forked manifold, assisting in breaking up the fuel and mingling it with the air. A water jacket connected in parallel with the cooling system of the motor surrounds the mixing chamber, this and the fuel inlet connection constituting the only connection except that of the manifold above.

As a result of this simple disposition, by loosening four lug bolts which pass from top to bottom of the device, it is possible to dismount simultaneously the float and mixing chambers, as well as to remove the governing or piston valve. In action, the weight of this member is just sufficient to ensure a rate of air flow proportional to that required by the motor speed which develops the suction. At the same time, the lift of the air piston, also serves to lift a small cone needle valve which is adapted to partially close the jet opening, thus proportioning the fuel delivery to the air supply. With this device no auxiliary air valve is employed.

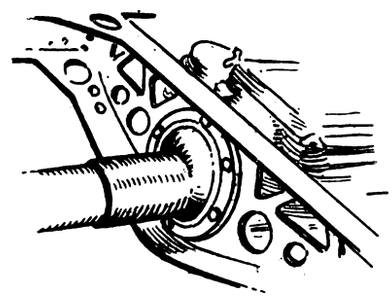
A rather large plain cone type of master clutch is employed, in conjunction with an original form of selectively actuated change speed gear, affording four speeds forward, with direct drive on the fourth. A rather unusual feature of the gear case employed is that instead of the usual cover plates of large size, only two hand holes are provided in the top, protected by screwed-in caps. The case proper is in two parts, and divides along the central line of the bearings. The car is shaft driven, and is heavily framed and mounted.

The smaller car may be outlined thus: Wheel base, 109 inches; wheels, 32 by 3½ inches; annular bearing axle and transmission; three-speed selective gearset; shaft drive; leather-faced cone clutch; motor, 4¼ by 4½ inches, bore and stroke; rated output, 25 horsepower. It is made up either as a five-passenger touring car, or a three-passenger runabout, with the usual rumble seat behind. The weight complete is about 1,900 pounds.

LOZIER.

To the chain-driven, 40 horsepower touring car which has stood in such excellent stead heretofore, the Lozier makers have added two new models this year, embodying two radical and basic departures from their traditions. These are shaft drive, which system is common to both of the new models, and a six cylinder motor. These two types, mount a number of alterations in detail which are innovations as well as advances in Lozier practice.

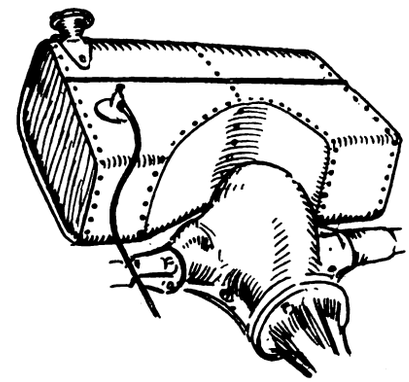
The specifications of the sextuple type are in a word, motor power by A. L. A. M.



Lozier Transmission Mounting.

rating, 50 horsepower; cylinders, 4⅝ by 5½ inches, cast in pairs, with jackets integral and valves actuated from below, the effect of the twin casting and economical arrangement of the annular bearings on the crank shaft being to secure a motor requiring a bonnet space only seven inches longer than that required for the quadruple motor. The complete duplicate system of ignition is employed, high tension throughout. The wheel base is 131 inches, and its weight, with seven-passenger body and full equipment, is 3,400 pounds.

The new four-cylinder car, on the other hand, has these salient features: cylinders 5¼ by 5¼ inches bore and stroke; slightly offset, as in the case with the sextuple motor; A. L. A. M. rating, 45 horsepower; wheel base 124 inches; weight, fully equipped, and with seven-passenger touring body, 3,200 pounds. In the transmission mechanism common to these cars, the clutch is of the multiple disc type, housed in the fly wheel and running in oil. The change gear is of the selective type, affording four forward speeds, with direct connection on the third. The final transmission as well as the mounting of the gear case is somewhat unusual as regards the joint support of the torsion tube and gear case on a single trussed cross member of the frame.



Lozier Fuel Tank.

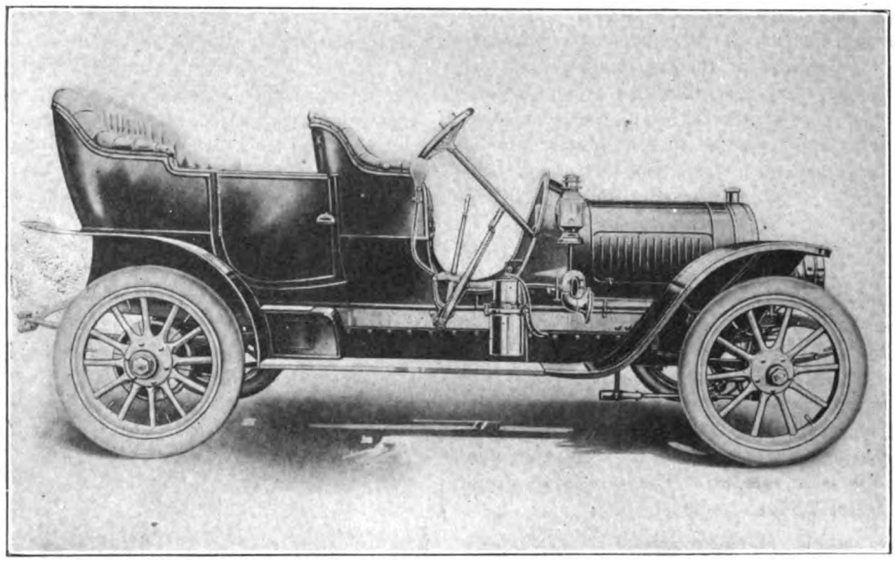
The torsion tube itself rides freely in a bronze sleeve of stable character, which has a ball shaped end, fitting closely a spherical socket in the transverse frame member mentioned. Surrounding the forward end of this socket is a collar by which the rear end of the gear case is carried. Two points of support at the side, and a complete attachment to the cast pan under the fly wheel, complete the hanging of the gearset, the arrangement of the supporting casting being such that a complete cast aluminum under pan is formed beneath the entire power plant. So compact is the arrangement of the driving mechanism that the 30-gallon fuel tank suspended in the rear of the chassis has to be cut away to afford proper clearance for the differential housing.

OLDSMOBILE.

The new six cylinder Olds, known as Model Z, is the headliner at the Olds Works stand. This is a seven passenger car rated at 48 horsepower, with a wheel base of 130 inches. The cylinders, which are 4½ by 4¾ inches, are cast in pairs and have both valves on the same side. The crank case is a one piece aluminum casting. Three cover plates on the lower part of the case give access to the crank shaft and connecting rod bearings. The crank

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shaft is of hand forged nickel steel, 1⅞ inches in diameter and is supported on four ball bearings, a set on either side of the middle pair of cylinders and a set at each end. Selective transmission is employed with three speeds forward and a reverse, high speed being direct. The transmission is carried in an oil and air tight aluminum case of its own, and has ball bearings throughout. The rear axle is of the Timken full-floating type, with a tubular strut rod and a nickle steel torsion rod. Full elliptic springs are used at the back. Spark and throttle levers are on the steering wheel but an accelerator foot button is also provided for driving through heavy traffic. Double ignition, storage battery and magneto, is supplied. The show car, finished in natural wood, is comfortable, and pleasing to the eye. A burnished chassis of the Model M, 36 horsepower, four cylinder Olds, which presents several changes over last year, is also on view. The open hearth steel frame is raised considerably at the back to accommodate full elliptic springs. The transmission is carried on full ball bearings, the ends of the transmission case being composed of the bronze holders for the bearing sets. These holders are threaded and may be screwed in or out for adjustment or removal. Simms-Bosch magneto ignition and cork inserts for the clutch are further 1908 features for this model. The Model M, dressed in various bodies, has as companions the Model MR, a smart runabout with the same mechanical equipment, and the Model X, a 32 horsepower car for five passengers.

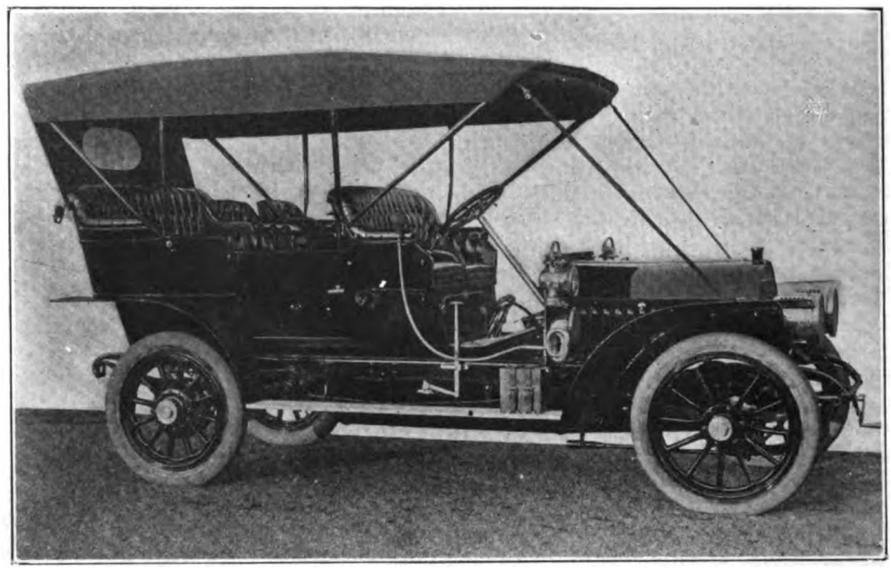


Pope-Hartford, Model M.

POPE-HARTFORD.

The new Model M Pope-Hartford occupies the center of the stage at the exhibit of the Pope Mfg. Co., of Hartford, Conn. It is a refinement of previous models. The motor, rated at 30 horsepower, has the cylinders cast in pairs with integral heads and water jackets. The valves, located in the heads, are interchangeable and are operated by one set of cams and push rods. The clutch, of the reversed cone type, has both large diameter and wide face. Leather with 34 compressed cork inserts makes the clutch surface. Selective transmission, three speeds forward, is used and the gear teeth this year are beveled to facilitate engagement in gear changing. The rear axle, fitted with Timkin roller bearings, is of the clutch type instead of the semi-floating variety formerly used, so that with the new model it is possible to take out all the interior rear axle driving mechanism without disturbing the rear wheels beyond removing the hub caps to withdraw the driving axles. An improved carburetter is used for 1908, designed to prevent flooding. Ignition and throttle control center on the top of the steering wheel on a non-revolving sector. The steering wheel itself is 17 inches in diameter and is made of aluminum with a mahogany rim.

Fitted with wind shield, top and a complete outfit of extras, a Model M with a striped Brewster green body and brilliant, shining red upholstery attracts a great deal of attention. By edging the top of the tonneau sides with strips of mahogany a very pretty finish touch has been added. The same car is also shown in its regular catalog form, with a "purple lake" finish to the body which is very rich, the effect being a deep translucent maroon. A runabout in red completes the Model M display. The Model R Pope-Hartford, lower in price, is shown as a touring car and with a limousine body. This model is similar in appearance and general lines to the Model M, but is fitted with Dow magneto ignition instead of batteries, and represents many little economies of construction in the motor and other parts. Two Pope-Tribune models are shown, a touring car in red and a French gray runabout.

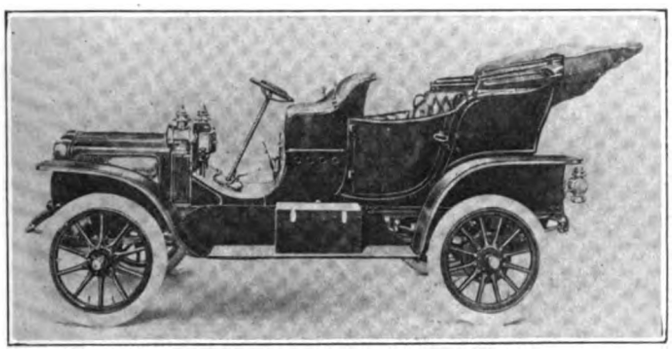


Columbia Gasolene-Electric.

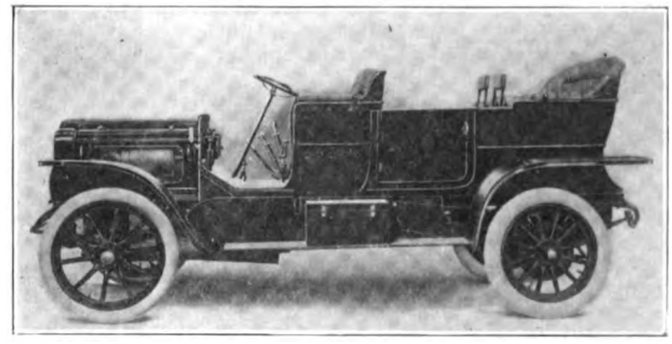
LOCOMOBILE.

Having first been introduced to the public shortly after midsummer, the 1908 Locomobile line appears at the show as an already well known and thoroughly proven group of vehicles, which therefore, and because they are practically unchanged from previous models, are to be considered as exhibits of structural excellence rather than as mechanical novelties, or sensational disclosures. The name Locomobile is applied to two types of chassis, one of 20 and the other of 40 horsepower, each being adaptable to the uses of either touring car, runabout or limousine. The ever increasing popularity of the closed car for city and

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White, Model L.



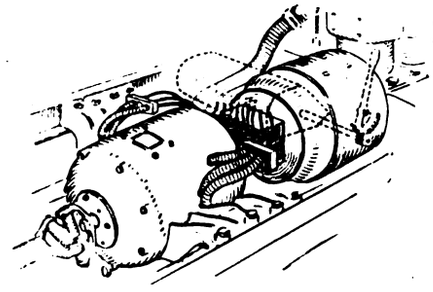
White, Model K.

suburban use the year round, however, in this case has stimulated the development of two very excellent and graceful limousines, one, of trim-looking design as applied to the smaller chassis, and the other of ample proportions, designed for the more luxurious purposes of the larger.

Type "I," which is a counterpart of the 1907 type "H," only a trifle enlarged and improved, may be described in outline thus: Motor, 5 by 6 inches; cylinder dimensions instead of 4½ by 5, as in type H; cylinders cast in pairs; valves mounted on opposite sides and actuated from below by direct thrust; ignition by low tension magneto make and break ignitors, with auxiliary starting equipment of accumulators; selective type change gear, affording four forward changes of speed; chain drive; wheel base 123 inches; tires, 36 by 4 by 4½ inches.

Though similar to last year's car in many respects, a few alterations have been made in addition to the increases in power and wheel base. How insignificant these exceptions are, however, is shown by mentioning one or two other of the more important ones, such as the adoption of a new form of hot air intake for the carburetter, which is affixed directly to the exhaust manifold; the removal of the clamping screw which binds the fastening yoke to the magneto from the side to the more convenient position at the top of the magnet; and the use of a flexible coupling on the pump shaft.

Type E has the same general mechanical features as the larger car, but on a reduced scale. Its wheel base is 102 inches, or 116 inches, where the limousine body is used.



Columbia Electric Transmission.

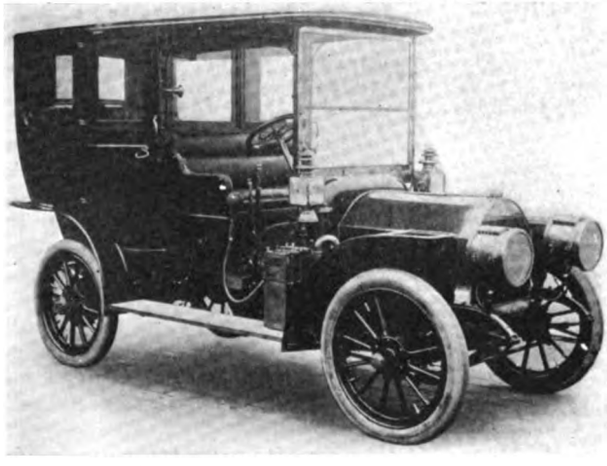
Both machines are of original design throughout, are massive in construction, yet it is noteworthy that they are designed with such skill as to be entirely free from any suggestion of clumsiness.

COLUMBIA.

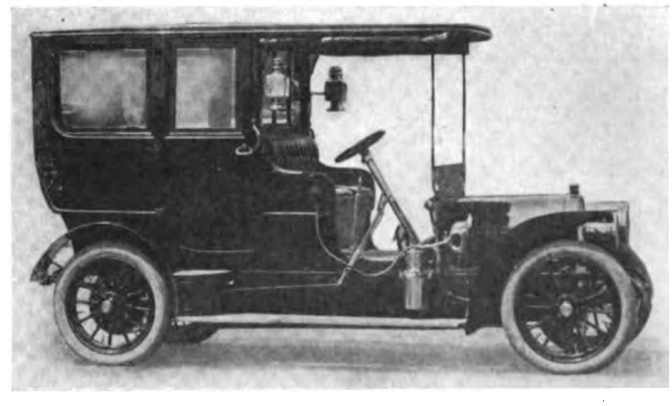
The presence of a model chassis of the Columbia gasolene-electric car, or more properly speaking, "the car with the electric transmission," serves to draw a great deal of attention to that vehicle, as well it may. Although shown in the form of a complete vehicle last year for the first time, it attracted far less attention then than now, probably owing to the advantage of the completely exposed mechanism in the present case. The fact that the car has been redesigned to a certain extent, and that it has a new and perfectly suitable motor, however, adds to the interest which otherwise attaches to it.

The electric transmission, which does away with all mechanical gearing between the engine and the differential group on the rear axle, if somewhat complicated in exact electrical theory, certainly is the very essence of mechanical simplicity. It consists merely of two electrical units—dynamo and motor—arranged with their rotary parts mounted directly on the driving shaft of the car. A special form of jaw clutch between them, and an electric controller of the rotating drum type, actuated by two levers, comprise the entire mechanism of control. Taking the place of the ordinary motor fly wheel, is an annular drum which is wound to form the field magnet of an electrical generator, the armature of which fits closely within it, but has no mechanical connection with it, its shaft being perfectly free to revolve independently of the speed of the motor as far as the mechanism alone is concerned.

Whenever the engine is turning, and the armature stationary, or whenever both are turning, but at different rates of speed, an



Studebaker, Model H.



Locomobile, Type E.

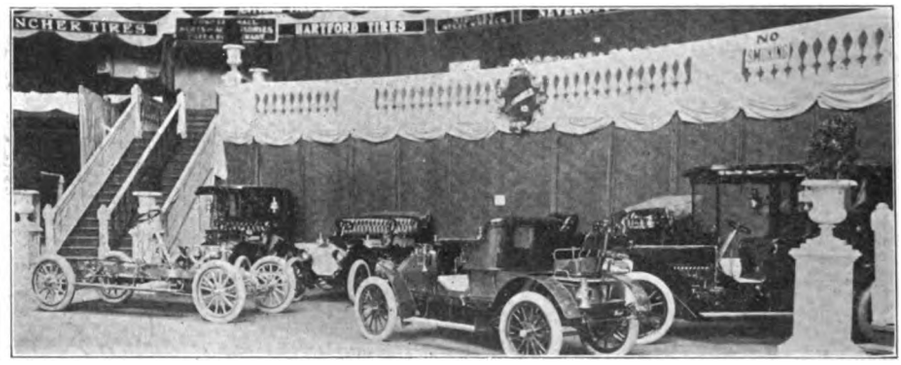
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electric current must be generated, as a matter of course. The generation of this current requires a certain amount of energy, however, and consequently if the armature is free to turn about its own axis, when the circuit is closed, the tendency is for the field to pull the armature around with it, but at a slightly reduced rate of speed. This constitutes in effect an electro-magnetic clutch, and is used for the direct drive, or ordinary running speed, the armature shaft being in line with the propeller shaft of the car, and directly connected with it at this time.

In order to obtain differences of speed between the engine and propeller shaft greater than this simple arrangement would permit, a second member is added, which is nothing more nor less than an ordinary electric motor having a stationary field and revolving armature which also is mounted on the propeller shaft a short distance back of the generator clutch. When it is desired to run the car more slowly than the normal engine speed permits with the direct drive, electrical connection is made between the dynamo circuit and the motor, as a result of which the current generated by the rotation of the field and armature of the generator at different rates of speed, is carried over to the motor, where it serves a useful purpose in helping to pull over the propeller shaft.

By the use of suitable controller connections, similar in a general way to those employed on electric street cars, it is possible to vary the speed of the shaft through a considerable range, while the speed of the engine remains constant. In this way five changes of forward speed are secured without the use of gearing of any sort, the only manipulation required in effecting them, being the progressive movement of the controller handle.

To obtain the reverse, it is necessary to move a lever which disconnects a jaw clutch between the generator and motor, at the same time locking the armature of the generator fast to the frame of the car, and converting the generator-clutch into an ordinary dynamo in which the fields revolve instead of the armature, but which otherwise is perfectly regular. This being done, the current generated by the motion of the engine, may be used in driving the motor on the propeller shaft in either direction and at various speeds. In practice, but two reverse speeds are employed. Suitable manipulation of the electrical connections provides in addition to the forward and reverse driving relations, a perfectly reliable and efficient electrical brake, which is strictly double acting.

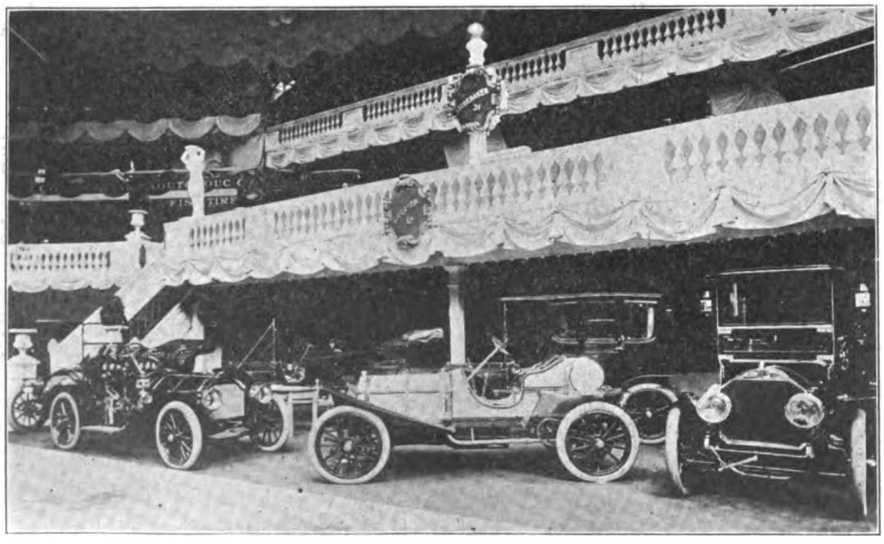


Locomobile Exhibit.

The 50 horsepower motor which is used in this machine, has cylinders, 5½ by 5½ inches, bore and stroke, cast in pairs, and with the inlet valves placed in offset pockets directly over the exhausts, and actuated by push rods and walking beams. The intake and exhaust ports for each cylinder group are siamesed, the piping thus being considerably simplified, the intake being led up from the right side of the motor to the top of each of the twin castings, where the gases are led in in a vertical direction, this disposition being somewhat unusual. Ignition is by jump spark, and the usual auxiliaries reveal little that is exceptional.

A new rear axle group is another new feature of the electric transmission car this year, a double jointed cardan shaft being employed, with torque and radius rod connections between the axle and chassis. These parts are particularly substantial looking, the radius rods in particular being noteworthy in that they are of pressed steel, channel section, and carry short rocker shafts which serve as a connecting link in the brake mechanism, giving it a direct line of tension from the main rocker shafts inside the frame, to the braking arms just inside the wheels. The brakes are of the external-internal type, actuated by pedal, and equalized by means of cables running over small sheaves on the extremities of the rocker arms.

The Columbia light touring car has been considerably improved since last year, the motor having been increased in size, its cylinders now measuring 4¼ by 4½ inches, and the rated output consequently being 28 horsepower, while the water jacket volumes have been increased to some extent, and the firing holes of the make and break ignitors have been reduced in size. In addition to this, the change speed gearing now is mounted entirely on annular bearings, the clutch diameter has been increased, the diameters of the steering hand wheel and the road wheels also having been enlarged, the latter to 34 inches. Otherwise, and except for the newly designed bodies, the car remains practically as during the last two years.



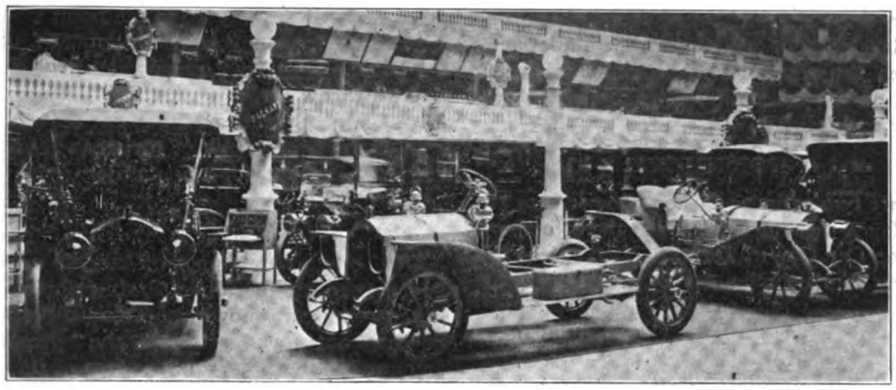
Apperson Exhibit.

WHITE.

As the sole exponent of the gospel of steam as applied to motor car construction exhibited at the Garden, as well as the carrier of what is beyond a doubt the most complete and efficient steam plant of its size in use for any purpose, the mechanism of the White car proves a strong center of attraction for the mechanically inclined, as well as those who are interested merely in the externals of the machine. Two models are shown this year, as last, the exhibit appearing in the "Licensed" show for the first time since separate shows have been held.

Model K is of 30 horsepower, and Model L has a 20 horsepower plant, in general,

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Packard Exhibit.

no startling changes have been developed for either model, but certain improvements have been made which are significant in their way. One of these, which applies to both types, relates to the placing of the thermostat, which governs the temperature of the steam, and plays an important though somewhat delicate part in the final regulation of the working fluid. The construction of this device also has undergone some little alteration.

The water supply to the semi-flash generator being derived from two parallel sources under independent control, the function of the thermostat is to supplement the action of the "regulator," which responds only to variations in steam pressure, by a more sensitive action affecting directly the temperature of the steam. To this end, a bronze rod of special alloy is supported in the steam line, and the latter being of iron, any changes in temperature of the steam will cause an unequal expansion of the two elements, thus producing a very slight motion on the part of the bronze piece, which is multiplied through linkage, and utilized in governing a valve by means of which water is introduced into the generator whenever the temperature of the steam becomes too high, thus lowering it at once; the reverse action taking place, and the valve being closed whenever the temperature of the steam falls below a certain point. So fine is the regulation developed in this way, that it is claimed that in practice on the road, the temperature of the steam seldom exceeds a variation of 10 degrees Centigrade.

The action of the thermostat is now checked by means of a thermometer placed within easy reading distance of the operator and in plain sight at all times. Furthermore, the device itself is located in such a position that it may be reached either from the side of the car, or through the footboard at an instant's notice. The new location is such that there is sufficient flow of steam over the expanding member to prevent any incrustation due to the use of impure water which otherwise might tend to occur.

A straight line type of body is now applied to Model K, considerably altering its appearance, while the lengthening of the wheel base from 116 to 122 inches, and the lowering of the car as a whole by hanging the generator and motor lower in the frame, but without altering the road clearance, which remains 10½ inches, as hitherto, in addition to increasing its stability, also have served to modify its appearance.

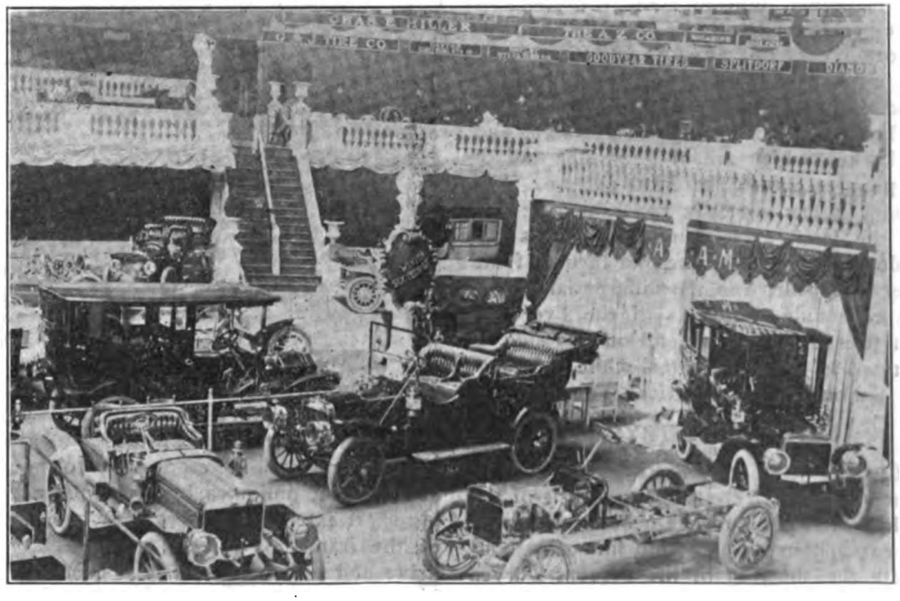
The smaller car has not been altered in these respects, but the adoption of a new generator of one-third greater capacity than that employed last year, as well as the new method of mounting the motor on an aluminum pan, thus eliminating the subframe construction, are changes which are by no means insignificant.

HAYNES.

By the development of a third and new type, the Haynes line has now been brought up to an even gradation in three steps from the Model S, at 30 horsepower, to the Model U at 60. Model W, the new car, which is shown for the first time, in addition to a number of other original features, possesses a double fly wheel construction which is absolutely new.

Instead of bulking the entire mass of the fly wheel at the rear end of the crank shaft, the same weight is used which naturally would be required with that arrangement, the fly wheel being built in two sections, as it were, and a portion amounting to less that one-half of it is placed at the forward end of the motor where, in addition to its nominal function it is useful as a belt pulley for the fan drive. This secondary balance wheel is of smaller diameter than the other, and consequently reacts on the variations of torque in a different way from that of the main member. In addition to this, the fact that the two parts co-act upon opposite ends of the shaft probably gives additional aid in steadying the movement of the motor. Both the cylinders and cam shafts are offset (the former by 3/8 inch), the result being a motor of exceptionally smooth action even at a moderate and very low speed and under load, as well as one which is "absolutely free" from the "gas" knock, which sometimes accompanies slow-speed running.

The general details of this model are: Output, 45 horsepower; cylinders, cast in pairs with oppositely placed valves, the Haynes method of coring large openings in the heads to provide means of access to the combustion chambers for cleaning purposes, being continued; double, high tension ignition; three-speed, selective change gear; shaft drive; wheel base, 106 inches; tires, 34 by 4 inches; weight, 2,650 pounds. In the change gear group, the use of the ratchet driving gear for the lay shaft—an exclusive Haynes feature—is continued, while the roller gear bevel drive in the axle group, also remains a distinctive feature. The torque bar, which formerly was placed vertically from the differential housing and projected between a pair of roller guides and up into the body under the rear seat, is continued in principle, but reversed in form. That is to say, an arm projects between the legs of a forked extension of the differential casing, the result accomplished being precisely the same as in the original sys-

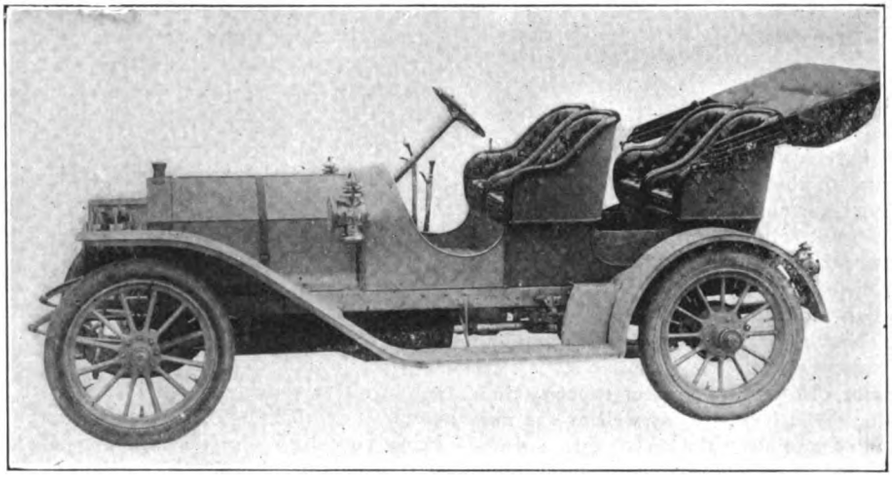


Winton Exhibit.

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tem, the space under the seat, however, being left perfectly free for storage purposes.

This altered construction of the torque bar, also is applied to Model U, the 60 horsepower car, which has been changed in a number of other ways since its introduction. Of these changes, the most important center about the engine, which has the double fly wheel arrangement, enlarged valves, a hot air intake for the carburetter, and double ignition, these improvements



Apperson, Model M.

furnishing an authentic reason for increasing the power rating from 50—the former figure—to its present amount. The superficial details of the car are: Cylinder dimensions, 5½ by 6 inches; wheel base, 118 inches; tire sizes, 36 by 4½ inches, front and rear; the weight complete, with touring body, 2,950.

The third car of the line, Model S, is continued practically as heretofore. It has a 3¼ by 5 inch, 30 horsepower, four cylinder motor, selective change gear, shaft drive, 102 inch wheel base, and 34 by 4 inch tires. It weighs comething like 2,250 pounds, and its regular touring body is adapted to a five-passenger load. Features of this and the other cars not already enumerated are the pressed steel frames, reinforced with wood, the clutch, which is of the contracting band type and of original design, and the brakes, which are of good size and of the popular external-internal pattern. The Haynes is exclusively a roller bearing car. For the front axles, Timken bearings are employed, as also for the end thrust of the roller pinion drive in the differential group. The rear axle, which is of the live type with telescoped driving end on one side, is mounted in Hyatt bearings, while the gear set is mounted on American bearings.

STEVENS-DURYEA.

"Big Six" cars with touring body and limousine, respectively, a show chassis of the "light six," together with a new four cylinder car in touring body and limousine constitute the showing of the Stevens-Duryea Co., of Chicopee Falls, Mass. The six-cylinder cars are unchanged from those put out last season, and the four cylinder embodies the construction refinements developed on the other models, except as to cylinder multiplicity.

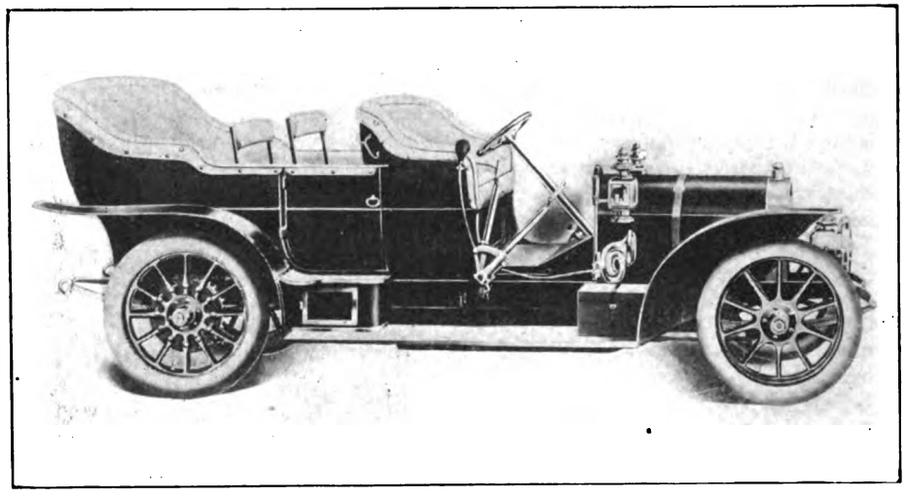
NORTHERN.

Only two-cylinder 24 horsepower cars are displayed at the space of the Northern Motor Car Co., of Detroit, Mich., although a new four-cylinder car is promised for a little later in the season. The chassis displayed emphasizes the claims for simplicity and compactness of mechanism that are made, although it is bare of radiator and other necessaries that when added would lessen the effect to some degree. The double opposed motor is mounted in front, under the hood, and immediately back of it is placed the planetary transmission. Motor and transmission are so tilted as to give a straight line from the crank shaft to the rear axle driving pinion, a long one piece driving shaft extending almost the whole length of the frame. The rear springs take the drive and a torsion rod is dispensed with by the use of a tube housing covering the drive shaft all the way up to the point where it emerges from the transmission in front, the leverage obtained making it permissible thus to throw a slight twist friction on the drive shaft. By this arrangement the whole rear of the frame back of the dash is clean and bare, except for the muffler.

APPERSON.

Of the two new Apperson models exhibited, safe to say the Model S, six-cylinder, 50 horsepower car, shown most conspicuously in runabout form, attracts the greatest amount of attention from the fact of its extreme compactness of motor build, as well as the neat details of its external appearance. Noteworthy points in connection with its motor equipment are the use of T-head independent cylinders, the bore and stroke of which is 4½ by 5 inches; the use of complete double ignition with two sets of plugs, the usual multiplicity of electrical connections so frequently in evidence where this system is used being notably absent in this case, the leads for each set of plugs being taken through brass conduits permanently affixed to the tops of the cylinders, and all loose and aimless connections being dispensed with; the elimination of waste room in the bonnet, the cylinders nearly filling the hooded space, both longitudinally and vertically, while the auxiliaries are compactly arranged, and also, as a result of this, the freedom from that ostentation in the general appearance of the machine, which becomes objectionable in several types of six-cylinder car.

The second new model on view, which, incidentally is more or less of an innovation in the Apperson ranks, since it is shaft driven, appears in the form of a four-seated runabout with individual seats of the same size front and rear, a not uncomely body, and roomy passenger accommodations. The motor of this, Model M, car is of the four-cylinder variety, with cylinders 4¼ by 5 inches, bore and stroke, and rated at 30 horsepower. The wheel base is 106¼



Thomas 40.

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inches, the tires are 34 by 4 inches, the weight is 2,400 pounds.

Model K, the 50 horsepower touring car, which is somewhat similar to the new six in general specifications, but is driven by a 5½ by 5 inch four-cylinder motor, is continued from last year in improved form. Its wheel base is 114 inches, wheel and tire sizes, 36 by 4 by 4½ inches, and its weight in touring car form 3,200 pounds.

The change gear systems of all the cars are of the selective type, that on the model M affording three forward speed changes, while the larger cars are provided with a fourth speed as well. Double chain drive is used on all except the Model M car, and a special type of contracting band clutch also is featured. Mounting the same general features as the four-cylinder touring car, but of semi-racing build and specialized accordingly in several particulars, the "Jackrabbit" is, like the touring car, continued with only such minor alterations in structural detail as have been found necessary.

PACKARD.

Probably no stauncher or more famous exponent of the one-design-a-year principle exists in the American market than the Packard, which is continued over from year to year, with few changes, if any, in its makeup, yet without falling back into the leftover class at any time. This is due in part to the fact that its fundamental design was correct originally, though rated somewhat radical at the time of its introduction, and in part to the fact that a certain number of refinements are made each year in so subtle a fashion as to bring the new model into line with others in its class, without in the least destroying the semblance of the absolute constancy in detail which is only infringed upon in minor ways. The Packard exhibit displays the touring, runabout and limousine models.

The specifications peculiar to the standard model are, motor, rated 30 horsepower; cylinders, 5 by 5½ inches, bore and stroke; valves placed on opposite sides of the cylinders; ignition, double with a single set of plugs, the Eiseman low tension magneto being supplemented by a storage battery, the vibrator coil for which is mounted on the dash along with the transformer for the magneto; master clutch of the internal expanding type, actuated by screw and nut mechanism; transmission, propeller shaft with double universal joints; change gear mounted on the rear axle in housing made integral with that of the differential group; brakes, internal-external on rear wheels; wheel base, 123½ inches; tires, 36 by 4 by 4½, front and rear for the touring car, and 36 by 3½ by 4, for the runabout.

Of the changes which serve to distinguish the present type from previous models, the use of the 36-inch tires is the most noteworthy, not alone because it is the only one which is conspicuous, but also because the alteration has been accomplished without disturbing the center of gravity of the vehicle as a whole, notwithstanding the fact that its axles have been raised. This effect has been secured by arching the rear of the frame so that the springs may be set lower, thus allowing them full play without risking the bumping of the axle under strenuous highway conditions. The wheel base also represents a slight increase over that of last year, the difference in length having been introduced entirely in front of the dash, giving the front springs a better leverage on their load, and tending to make the car ride easier in front. The diameter of the steering wheel has been increased, also, as has that of the steering column; which thus is made even more substantial than hitherto. The radiator capacity has been increased somewhat, as has that of the lubricating oil tank, which holds approximately twice as much as before. The radiator also is fitted with a new type of filling cap with a form of bayonet lock.

The master clutch has been altered to the extent of adding a relieving spring to one side to ease the gripping action coming with too sudden release of the pedal, while the pedal linkage controling the clutch has been altered in such a way as to decrease the throw of the pedals. A change in the construction of the axle transmission group which has added something to its strength as well as improving its appearance very materially, consists in the use of internal strengthening webbs on the casing, instead of the external flanges which were formerly employed. A few detailed alterations have been made in the delineation of the bodies, but they are comparatively insignificant, with the possible exception of the limousine body, which is now pocketed at the sides in order to give more inside room with the same amount of wheel clearance as before.

ELMORE.

As the sole exponent of the two-cycle principle to be found in the Garden, the Elmore cars, as in former years, are centers of no small amount of interest and enthusiasm. Incidentally, the growing production of six-cylinder motors of the four-cycle type, has served as a strong text for preaching the two-cycle gospel, and the amount of technical discussion which the week has developed about the Elmore stand has been of a voluminous and instructive nature. Two types of car are produced under this aegis, namely the "30" and the "40," of three and four cylinders, respectively. Both are continuances of former models, but with sundry changes which make for a decided betterment in action. It is significant, however, that these alterations relate mainly to the construction of the chassis and not to the motors.

The larger car has a three port valveless motor, of 4½ by 4 inches, cylinder dimensions, selective type, change gear affording three forward speeds, shaft drive, 110-inch wheel base, 34 by 4 inch tires, and weighs equipped, 2,250 pounds. The dimensions of the three-cylinder motor are the same, per cylinder, while the overall specifications of the car are 104-inch wheel base, 32 by 3½ inch tires, and weight, 2,100 pounds.

The Atwater-Kent timer system has been adopted for the new cars, in addition to which, such changes as an increase in the wheel base of the larger, the adoption of a new type of steering gear, and the use of a new type of air cooled emergency brake on the rear wheel, as well as the use of an improved form of rear axle, are to be observed. In this connection, it is noteworthy that the three-quarter platform suspension used in the rear is supplemented by the use of helical springs mounted in tension between the rear axle and brackets offset from the side frame members on the inside of the chassis.

BUICK.

The strong feature of the Buick line for 1908 is the brand new offering of a 20 horsepower, four-cylinder runabout, with rumble seat, for $850. This little machine, which has a particularly sturdy and gratifying appearance, and seems to be quite the marvel it is claimed to be, has a vertical motor with cylinders, 3¼ by 3¼ inches, bore and stroke, with valves in the head seated in removable cages, actuated by push rods and walking beams, planetary change gear, shaft drive, semi-elliptical front and full elliptical rear suspension, expanding brakes on rear wheels, contracting band brake on drive shaft, 88-inch wheel base, and 30 by 3 inch tires. The power plant is mounted on a sub-frame, which, like the main frame, is of pressed steel. The parts are all compactly and neatly designed, and the general effect is that of a staunch and reliable machine of the light class.

A second innovation in the Buick line is a 2,000-pound, 24 horsepower touring car of the medium priced class, which is built much more solidly and in more general accordance with common practice. It has 106-inch wheel base, 32 by 4 inch tires, selective type change gear, shaft drive, multiple disc clutch, full elliptic rear springs. The models made last year are again continued with various improvements.

STEARNS.

What is little short of freak body design is disclosed on the four and six cylinder four-passenger roadsters at the space of the F. B. Stearns Co., of Cleveland. The two front seats, with very low backs are but a few inches above the floor, and are "staggered" so that the driver's seat is considerably in advance of that of his companion. The passenger who rides thus on the driver's port quarter, as it were, has an immense area of floor space in front of him, so that he may squeeze his shoulder blades into the little cup shaped seat and lie supine along the floor with his legs stretched forward till they reach a brass footrail that is provided. The two rear passengers, while having less provision for

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reclining positions, are nevertheless given the same sort of indentations to sit in. An outrigger seat over the running board, for the chauffeur when he is not at the wheel, is further provided on the four cylinder roadster, an innovation which suggests great possibilities of dotting extra seats in many now unthought-of places. The cars are finished in the richest style and however much on first view the passengers' comfort may be doubted, they present a striking and imposing appearance. The Stearns four cylinder chassis is on display but presents no radical changes over the model made familiar during the past season. A seven passenger touring car on this chassis is shown which is a delight to look upon. It is finished in broad alternate stripes of deep green and black.

KNOX.

The feature of the Knox exhibit is the type L car, shown in addition to the several types of air cooled machines which are practically unchanged; it is the first Knox to employ a water cooled motor, but otherwise agrees in general specifications with the Model H of last year. The motor in question, which is 4⅜ by 4¼ inches cylinder dimensions, and is rated at 30.6 horsepower, is of the same general type as the air cooled original, is mounted on the same type of unit base, and has valves in the head, actuated by push rods from a single cam shaft. An unusual feature of the construction is the use of independent cylinder heads, which, though completely water jacketed, are held to the main cylinder castings by means of four lug bolts.

The Electric Pleasure Cars in Evidence

Like a "wheel within wheels" the electric vehicles are having a show within a show and are monopolizing the large room which was formerly known as "the restaurant," but which has of late years suffered so many interruptions in the meal survice on account of various shows and exhibits that it is now given the more dignified designation of the "Madison avenue exhibition hall."

Here the electric pleasure vehicles reign supreme, nearly all of them being gathered in the one fold, the exceptions having to be located elsewhere through lack of room. The exhibits of electric models show a most enterprising diversity, from speedy runabouts capable of almost 40 miles per hour to the most practical and economical of service rigs, and from dainty little Victoria type phaetons to immense and luxurious family carriages. The mileage and speed possibilities of the regular types show marked increases. The difficulties that confronted the prospective purchaser in former years as to getting proper charging current are also lessened, as rectifying and charging apparatus is offered in variety, giving evidence of the growing wisdom of the makers of electrics in making easy the maintenance of their cars.

In the center of the hall the Electric Vehicle Co., Hartford, Conn., displays five vehicles, four of which have one chassis in common. The brougham, landaulet, hansom and Victoria, all of which list $4,000, have a 40 mile radius and a maximum speed of 20 miles per hour. The chassis has a single motor shaft drive and is equipped with three-quarter platform springs in the rear. The battery equipment is 44 Exide cells. A smart Victoria phaeton at $1,000, known as Mark LXIX, Lot 3, is rated with a mileage capability of 68 miles and a maximum speed of 22 miles per hour. This rig has a single chain drive and a battery equipment of 30 cells.

In the Pope-Waverly line, offered by the Pope Motor Car Co., Indianapolis, Ind., the Model 70 C Victoria-coupe with interchangeable bodies is featured. The construction of the body is such that the coupe top may be removed, leaving a Victoria phaeton, to which a leather top may be added if desired. The passenger floor is curved to a low point where the step adjoins, a constructional refinement on which great stress is laid. The vehicle lists at $1,900. Like the regular Victoria phaeton, Model 67, which lists at $1,600, and is also shown, it has one special Pope-Waverly motor designed for double overload and gives a speed of from 5 to 16 miles per hour with a 30 cell battery equipment. Noiseless "herring-bone" gearing, running in oil and protected in dust proof cases, is used. The Model 26 Chelsea, with removable coupe top, at $1,700, and the Model 65 Stanhope with leather top at $1,500, both having the same general running gear specifications as the models previously described, are also shown. A speed of 17 miles an hour is claimed for the Model 71 runabout with leather top, at $1,500, and the Model 69 runabout with leather top at $1,225, as these, while having the same power equipment as the others, bear much lighter bodies. The Model 60 surrey, which is also on the floor, has two motors and 42 cells. With its complement of four passengers it makes 15 miles per hour. Complete with leather extension top, as exhibited, it sells for $1,900.

Three open electrics with tops, together with a 14-passenger omnibus and an ambulance, constitute the non-commercial electric exhibit of the Studebaker Automobile Co., of South Bend, Ind. The Model 16d Victoria-phaeton, with graceful curves and splendid finish leads off. It has a mileage capacity of from 60 to 70 miles on the high speed, the distance, of course, being subject to great increase on the lower speeds. The rate of 15 miles an hour is not at all difficult for it. One special type motor is used, with ample overload capacity, while the battery equipment consists of 28 cells of 11-plate battery, part carried in front and part in the rear, for equal weight distribution. Models 22e and 22a, of the Stanhope type, vary only slightly in body design, and being lighter, match in performance the phaeton as to mileage and speed with a battery equipment of 24 cells. The 14-passenger bus, known as Model 2006e, has two motors of special design, each 80 volts and 20 amperes. The battery equipment is 40 cells in four separate units of 10 cells each. The mileage is between 30 and 40 miles and the speed on good roads from 3 to 10 miles. The vehicle, which weighs 5,500 pounds, accommodates 14 occupants beside the driver.

When the Baker speed roadster, built to look like a gasolene runabout speedster, was disclosed last year it created a buzz of comment as something very radical in the electric line. A similar model is shown this year by the Baker Motor Vehicle Co., of Cleveland. It is styled the Model M roadster and is credited with a speed of 38 miles an hour, and a radius of 70 miles when driven at the lower speeds. It is a long, rakish runabout with rumble seat in the back, holding a total of three passengers when necessary. The battery equipment is 40 cells, 9 P. V. The power from the motor is conveyed through a planetary gear reduction and shaft drive to bevel gears on the rear axle. The speed control is of the continuous torque system, the speed changes being made without sparking. There are nine speeds forward and three reverse, eight of the forward speeds being without resistance. From the first to the fifth speed inclusive the batteries are in parallel, while for the higher speeds they are in series. The speed lever is mounted on the steering wheel. The motor is rated at 3½ horsepower. Ball bearings are liberally used to give high efficiency. The blue of the body together with the yellow running gear give the car a very natty appearance, and it attracts a great deal of attention. The company also has for inspection the Queen Victoria, a popular design for general use or woman's driving. It is capable of 20 miles an hour and has a battery equipment of 24 cells, 9 M. V. The Baker inside driven coupe is likewise shown. It is the same chassis with coupe body, the latter being interchangeable with the Queen Victoria body if desired. The coupe style is recommended for physicians and for winter driving. A demonstration chassis of these two models is featured. It shows the steel frame which is a Baker feature and the control system giving six speeds forward and three reverse.

Another electric speedy roadster is revealed in the space of the General Vehicle Co., of Long Island City, N. Y. It is a racy, gray affair, with a battery equipment

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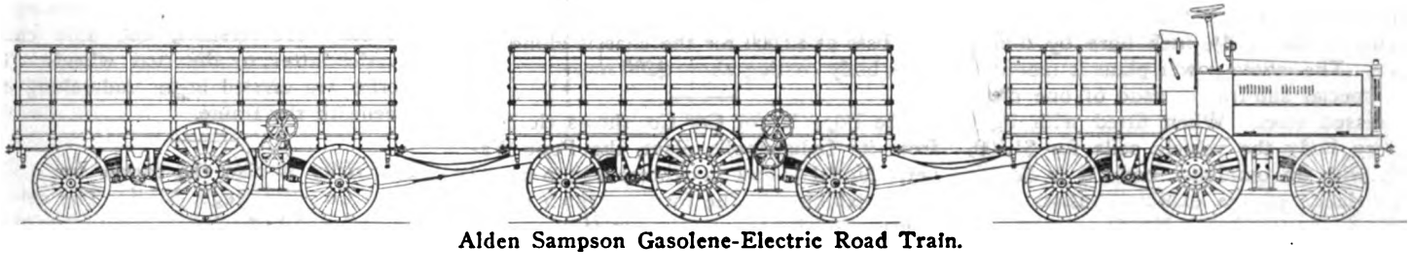
of 40 cells and capable of 30 miles an hour. One the lower speeds it has a rated radius of 150 miles. A fancy green runabout seating two is also shown. This can make 18 miles per hour and can go 50 miles on one charge. The same chassis takes a phaeton body. A landaulet, luxurious in every way, is displayed. It can go 60 miles on one charging and can travel at the rate of 15 miles an hour. The battery equipment is 40 cells, and the complete vehicle weighs 3,000 pounds. A feature of the General method of construction is the use of Morse silent chain both for the gear reductions and for the final drive, rather than the employment of any gears.

A clever little canopy top Victoria-effect runabout confronts one at the stand of the Columbus Buggy Co., of Columbus, O. It has a maximum speed of 21 miles an hour and when driven at the more moderate pace of 12 or 13 miles an hour can cover 75 miles without recharging. A single motor is used with double chain drive from a differential countershaft, and 21 cells constitute the baatery equipment. A Victoria and a coupe on the same chassis are offered. The chassis is also shown stripped for demonstration purposes.

For the Babcock roadster, Model 5, exhibited by the Babcock Electric Co., of Buffalo, N. Y., it is claimed that at 16 miles an hour on good, level macadam roads 85 miles can be readily obtained on a single charge of the battery. The maximum speed is 26 miles per hour. The equipment of battery is 36 cells, divided between the front and the back. Five forward speeds and two reverse are given. When fitted with the Victoria phaeton body the speed is reduced to about a 25 mile maximum, but the latter body, because of its low hanging and wide entrance has many advantages for stout and elderly people. Wheel steer is used in both models, the steering column having a breaking joint to permit easy ingress and egress to the operator's seat. The same chassis is also shown fitted with a coupe body. The Model 1, a Stanhope, completes the exhibit. This has a mileage rating of 50 miles for ordinary roads, and a maximum of 18 miles per hour, being equipped with 40 cells.

A Stanhope and a coupe mounted on what is termed their Model 10 chassis are shown by the Rauch & Lang Carriage Co., of Cleveland. The chassis itself is also shown stripped of any body. It has 24 cells, 9 M. V., and can carry either the Stanhope or the coupe at 20 miles an hour. With suitable tires and good roads it is claimed that it can cover almost 100 miles on one charge. A six-passenger landaulet with 24 cells, 17 M. V., is displayed, too. It has a maximum speed of 18 miles per hour, which the manufacturers thing amply high for city driving.

Concerning the Commercial Vehicles



Alden Sampson Gasolene-Electric Road Train.

A round dozen makers staged commercial vehicles and their combined products range from a road train capable of carrying 20 tons cargo, to light wagons built for loads under 1,000 pounds. Two makers exhibit five ton trucks, one gasolene and the other electric, and in the smaller vehicles the two powers divide things about even, the freight train straddling by using both in a combination whereby gasolene generates the primary power and electricity transmits it.

What is described by its makers, the Alden Sampson Mfg. Co., of Pittsfield, Mass., as a "multiple unit road train," is literally the big feature of the commercial section, as it also is interesting from the point of novelty and radical design. It consists of a tractor with two trailers, the tractor mounting an electrical generator for supplying current to the motors individual to the trailers, the whole outfit being operated like the multiple unit system of a subway train, where the operator in front controls the action of not only the first car, but of those that are attached behind. The tarctor itself has six wheels and the trailers, too, have six wheels apiece, three on a side, the center wheel in each case being a drive wheel 54 inchs in diameter with 5-inch steel tires, while the wheels at either end are but 42 inches in diameter, with 3½ inch steel tires. The tractor and two trailers in combination are capable of carrying 20 tons at a rate of 6 miles an hour on level, hard macadam. The power plant of the tractor consists of a slow speed four cylinder motor of about 60 horsepower, driving a direct current generator. The current thus obtained is available for the electric motors operating the drive wheels on the trailers through the medium of connecting cables and when the whole train is in motion the two driving wheels on the tractor and the driving wheels on each of the trailers are all operated by electricity. Each trailer, therefore, has sufficient driving traction for its own load and the tractor is relieved of having to pull the whole mass. There are two motors to each car, a motor to each driving wheel, thus doing away with the need for a differential. The driving wheels are so free and unhampered in their action that they will easily ride over obstructions 12 inches high.

In turning corners the cars track each other practically perfectly and the whole train can make a complete turn in a 20-foot radius. Each car is steered by a tongue attached to the rear of the car ahead of it, the front and rear sets of wheels being cross connected so that in rounding a curve all six wheels follow concentric radii. The cars are 17 feet long by 4 feet 2 inches wide, and stand 4 feet high, weighing 7,000 pounds. The wheel gauge is 72 inches.

The power plant on the tractor makes it possible for the latter to stand still and yet supply power to move a trailer that is quite a distance away from it, if suitable lengths of wire are provided to supply the trailer motor with current from the tractor dynamo. Series-paralleling is accomplished by means of a rotary switch which is interlocked with the one-minute starting hreostat in such a way as to make it impossible for a careless or ignorant operator to cause damage to the electrical equipment. Braking is done by short circuiting the motors, making two magnetic brakes for each car.

The Hewitt Motor Co., New York City, exhibits a 5-ton truck of the most sturdy design. It is equipped with a gasolene motor rated according to the A. L. A. M. formula at 28 horsepower, and having four cylinders of 4¼-inch bore by 5½-inch stroke. The main fuel tank is at the side of the car, from which gasolene is from time to time pumped to the gravity feed tank on the dash. Simms-Bosch high tension magneto ignition is used, without supplementary batteries of any kind. The radiator extending across the front of the wide dashboard has an unique spring suspension mounting to save it from the strains and warpings that it might ordinarily get on the stiff truck. Spiral springs at each side of the dash support it and the arrangement is such that the whole radiator may be taken off with little difficulty.

A shaft with two universal points conveys the power to the cone clutch and planetary transmission. The latter has the usual two speeds forward and a reverse, the

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drive, of course, being direct on the high speed. The brake bands on the transmission are of fibre. Two universal points are also used on the shaft from the transmission to the differential and the power is conveyed thence to the rear wheels by side chains. The long frame of channel section is of pressed steel, strongly reinforced at the corners. The springs are of the semi-elliptic type and those in the rear have 19 leaves. The rear wheels, which may be supplied with either twin or triple tires, are fitted with internal expansion brakes 24 inches in diameter and with 3-inch faces. There is also another brake on the transmission. Special Timken roller bearings are used for all heavy bearings. The chassis alone lists at $4,500, but equipped with a stake truck body sells for $5,000, a complete truck thus fitted out being shown. The same style of chassis with coal wagon body might be seen the fore part of the week delivering 5 tons at a time to the Madison Square Garden coal chutes.

The standard light Hewitt delivery wagon is also shown. This has a single cylinder motor rated at 12 horsepower, the dimensions being 4½-inch bore by 6-inch stroke. The whole power plant is mounted on a special sub-frame made of one piece of pressed steel. When fitted with light delivery body the vehicle sells for $1,600, while with an omnibus body it is $2,000. The balance of the exhibit consists of a standard four cylinder Hewitt motor and an eight cylinder V type motor for omnibus use, fitted with a special carburetter, guaranteed to give a steady gas supply to all eight cylinders, and a special eight lead distributor.

The 5-ton electric truck is shown by the General Vehicle Co., of Long Island City, N. Y. It has a single motor and uses Morse silent chain for the first reduction to the countershaft and differential, thus avoiding the use of gears. The motor is ball bearing and Timken roller bearings are used for the countershaft and wheels. Side chain drive is employed from the differential countershaft. The truck is capable of about 25 miles on a charge and the speed is in the neighborhood of 6 miles an hour. The beer truck style, as shown, lists at $4,500. A 3½-ton truck, with the same general principles of construction, is exhibited by the same makers. It is capable of 8 miles an hour and is good for 30 miles. The price for this style is $4,000. The 1,000 pound wagon completes the commercial exhibit of the company. It lists at $2,200 and can make 40 to 50 miles, its maximum speed being 12 miles per hour.

Two styles of wagons were shown by the Knox Automobile Co., of Springfield, Mass., the first being a 30 horsepower 3-ton truck with a four cylinder air cooled motor, three speed selective transmission, double chain drive, and rear wheels equipped with twin tires. Complete with Boston brewer's body it lists at $4,200. The 1½-ton truck, with two cylinder air cooled motor rated at 16-20 horsepower, has planetary transmission and lists at $2,600 for the chassis alone, an open body costing about $200 more.

The Pope Motor Car Co. shows electrics from its Indianapolis plant, the Pope-Waverly Model 43 and an express wagon model being exhibited. The former, which is the lighter model, has a single motor suspended from the frame and uses a double chain drive from a countershaft fitted with differential. It carries 42 cells for battery equipment. With an open body it lists at $1,800, and with a closed body at $1,850. The express wagon type has a double motor and is of about double the power. It uses double chain drive from a differential countershaft, like the other model, but differs from it in that semi-elliptic springs and plain bearings are used instead of full elliptic springs and ball bearings. Its price is $2,500, complete with the express wagon type of body with top.

A single Franklin truck is displayed, this being the 16 horsepower stake truck with four cylinder air cooled engine and spiral gear drive. The vehicle lists at $2,000, the manufacturers being the H. H. Franklin Mfg. Co., of Syracuse, N. Y.

The Cadillac light delivery car at $1,000, with a single cylinder 10 horsepower motor occupies the downstairs space of the Cadillac Motor Car Co., of Detroit, Mich. The vehicle has a covered body and has a carrying capacity of from 500 to 600 pounds.

The commercial chassis of the Baker Electric Co., of Cleveland, O., capable of taking a variety of bodies, is shown fitted as a police patrol wagon. The complete chassis with 42 battery cells, 9 MV in series at all speeds, weighs 3,000 pounds. The frame is of pressed steel, which is something of a departure in electrics. Renold silent chain is used from the motor to the differential countershaft, and side chains from the latter to the rear wheels. The batteries are carried in an underslung cra dle beneath the frame.

Electricity is also the power for a neat Wagon Co., of Owego, N. Y. The vehicle, with enclosed body, has a carrying capacity of 750 pounds and can go 35 miles on one charge. It has a single motor equipment and a triple linked spring suspension.

While making no exhibit of commercial vehicles, the Packard Motor Car Co., of Detroit, Mich., has a large space in the commercial vehicle section where a factory expert is ready to figure with those interested as to the use of the Packard commercial chassis. The company is prepared to supply a great variety of bodies.

In the Realm of Tires and Accessories

Between the closing of the Palace show on Thursday night and the opening of the Garden show on Saturday, forty-five hours later, it scarcely was to be expected that those exhibiting in the first show would display anything new in the other show which so closely followed. Perforce, so far as accessories are concerned the Palace funtion took much of "the shine off" the second, but, as a matter of course, practically all of the better known accessory manufacturers were "present and voting" at both shows, as, for instance, the Diamond Rubber Co., Morgan & Wright, G & J Tire Co., Continental Caoutchouc Co., Goodyear Tire & Rubber Co., Hartford Rubber Works Co., Fisk Rubber Co., Ajax-Grieb Rubber Co., Firestone Tire & Rubber Co., and the Michelin Tire Co., and, of course, there are Midgley rims, Timken axles and bearings, Whitney chains, and Truffault-Hartford shock absorbers, and Solar lamps, and the Jones, Warner, Smith and Index speed indicators, Splitdorf, Witherbee, Heinze and Pittsfield ignition apparatus, and all of the well known products that contribute to the satisfaction of automobile usage.

But despite the fact, there are installed at the Garden not less than eighty-one accessory exhibitors who did not display their goods at the former, and it is among them that any newness must be looked for.

Two entirely new products appear in the exhibit of the Jones Speedometer, of New York, in addition to the regular line of Jones Speedometers. The first is the automatic speed regulator, having a dial arrangement which may be placed in the tonneau while the speed indicator part is on the dash of the car. The dial may be set for almost any maximum speed, and when that speed is reached the device automatically prevents the car going faster, by cutting out the spark or controlling the throttle. A new recording instrument, christened the "speedograph," is the other novelty. When put out in perfected form it will give graphic records of time, distance and speed on disc records of paper.

Each year the Garden show offers the opportunity for the Splitdorf Laboratory, New York, to bring out its new discoveries and always something new may be expected from it. This year the "something new" is a four cylinder unit coil with one synchronizing vibrator for the four coils, insuring an absolute correct timing of the ignition. The vibrator is of the high speed type, consuming a quarter of an ampere; these coils are also equipped with an aux-

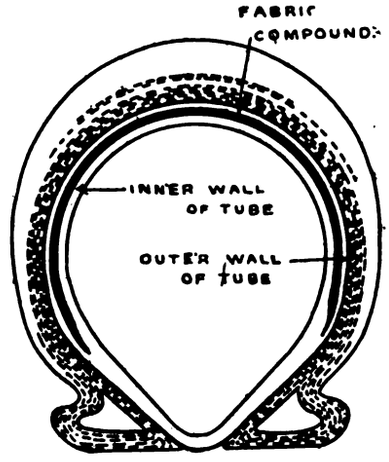
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iliary condenser in each unit, whose sole purpose is to absorb the spark or arc which is ever a menace to the commutator. This will be appreciated, especially as it is estimated that 90 per cent. of the ignition troubles are due to the destruction of the contacts in the commutator. The speed of the synchronizer is due to the short magnets which are employed in series with the primaries of the other units in operating the armature, and as a special unit is reserved for this vibrator a sufficient amount of condenser is supplied in this unit which will take care of any possible spark between the platinum points of the vibrator.

In addition to the Eiseman magneto and imported parts, of particular interest at this time, when the taxicab is very much in the public eye, not alone of the automobile manufacturers, but of those in the transit methods generally, is one of the exhibits of Lavalette & Co., of New York, who are showing an absolutely new taximeter for use on both motor cars and other wheeled vehicles. It is designed, of course, for use in indicating the amount of fare to be collected at the end of performed service. In outward appearance it is much like a small steel cash box, black, with a gold stripe; it is about 9 inches high, 5 inches wide and 7 deep; the front of glass permits a view of a silvered dial bearing indexes of the tariff—i. e., day or night use—fare in dollars and cents, also an index for "extras," by which is intended the baggage charges. operated at the vehicle by the gears of the same general type as used in speedometers. The connection to the taximeter is through a flexible shaft. On the side of the meter a small red metal flag indicates by its position if the car is engaged or is for hire, a perpendicular position indicating it is for hire; dropped or horizontal, that it is engaged. On the same side a small T handle is for the purpose of winding the clock work, which is started automatically when the vehicle is waiting the return of the passenger who has engaged it. In the event of a delay for which the fare is not responsible, a break or puncture, a lever on the same side as the other mechanism is thrown forward, showing a dial indication of "not recording." On the back is a series of indicator dials or wheels not unlike the appearance of an odometer, which show the total number of fares carried during a certain period of time, the number of miles traveled and the amount collected. The registration of "extras" is controlled by a push button arranged on the back.

A high tension magneto in which the primary circuit is automatically broken by the use of the magnetic force is the principal feature of the Albert Champion Co. exhibit. In this magneto the primary contact breaker has also the advantage of acting as an automatic cutout. When the armature has reached a certain speed it controls the high tension and makes it constant, the primary break in magneto fields acts as an automatic blow-out, eliminating arcing between the points of the primary breakers. In the distribution of the current there is no 2 to 1 shaft used, its place being taken by an internal gear in connection with a floating gear. A wide range of speed with spark advance is controlled by a shutter which displaces the magneto field between the armature and pole-pieces.

In respect to tires, the Dow non-deflation inner tube undoubtedly is the greatest novelty. It previously had been seen by many men in the trade and some of those in the Association of Licensed Automobile Manufacturers thought so well of it that they have been more or less indirectly exploiting it. At the Garden it is shown in improved form.



Dow Non-Deflation Inner Tube.

The Dow inner tube may be described as a tube within a tube. Considering the smaller diameter, the contained tube is vulcanized to its casing for about one-quarter of the diameter, the rest of it forming a pocket which is filled with a compound of paste and selected feathers. Inserted in a shoe in the same manner as the ordinary tube, it is inflated in the usual manner; the outward appearance is conventional. When the inevitable puncture occurs the feather compound finds the opening, seals it without appreciable loss of air and the puncture ceases to exist. With the pressure maintained in the tube the life of a shoe, which is always shortened if run soft, is necessarily lengthened by being used in the condition for which it was constructed, the probability of blow-outs becomes remote and as the tube construction does not subtract from the resiliency of the tire one obtains the maximum mileage with minimum trouble and expense.

The makers of the Kelly-Springfield tire bounce into the ring at the Garden show as makers of pneumatics. The Consolidated Rubber Tire Co., of New York, shows the new Kelly-Springfield pneumatic tires in a great variety of sizes. The new tires are regular type clinchers, with raised corrugated tread.

Holley Bros. Co. radically have changed their 1908 Holley carburetter, both in design and principle; it now constitutes a departure from the conventional designs of carburetter. A high air velocity is obtained in the mixing chamber by applying the principle of the Venturi tube, which feature, though not original in this carburetter, is important, for the reason that frequently is incorrectly applied. The true Venturi tube acts to discharge a liquid or gas with a velocity through the smallest section of the tube greater than the velocity due to the head alone. In the new Holley carburetter the gasolene level in the float chamber, instead of being slightly below the gasolene orifice, is about one-eighth inch higher, and it is in this fact that the radical departure lies. In some carburetters it is necessary to lift the gasolene by vacuum to produce a mixture, and at slow speeds the suction to accomplish this is lacking; in the new model there is a puddle one-eighth inch deep in the bottom of the chamber when the motor is at rest. Consequently when the motor is starting or running very slowly, the air does not have to lift the gasolene at all, but draws over the puddle and is carburetted by surface evaporation. As the throttle is opened and the air velocity increases, the puddle gradually is swept away by the strong air current over it, thus reducing the surface area of the puddle, and maintaining constant proportions of mixture. At the higher speeds the puddle is wiped out entirely and a spray of the ordinary sort takes place. Another feature claimed for the new model is that it has but one adjustment, all of it being made through the needle valve. At a slight additional cost the needle valve is fitted with a universal joint from which a small rod may be run through the dashboard, thus permitting adjustment from the seat while the engine is in motion.

R. E. Hardy & Co., whose Sta-Rite spark plugs are too widely known to require description, has brought out what is termed a magneto plug. In general construction the plug embodies the same principle as all Sta-Rite products, with a shell separable for cleaning and the porcelain protected by a metal cap, but it differs from the others in that it has a center sparking point of thick nickel, with four ground wires, the claim being made that this arrangement eliminates any chance of burning out the contact points, as the heat from the spark is equally distributed. The Stackpole Battery Co., St Mary's Pa., shows an assortment of dry cells and battery connections. In addition to its batteries, the Vesta Accumulator, Chicago, exhibits a line of electric horns, operated by push button from the steering wheel.

The Leavitt distributor, marketed by the Uncas Specialty Co., has been improved to some extent, and a new model of the Leavitt siren horn, with an eight-inch bell, also has made its appearance. Janney, Steinmetz &

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Co., Philadelphia, have found improvement impossible in their large line of seamless cold drawn steel tanks, and that company still is marketing the Hill gasolene lock, the Lowndes duplex pipe wrench, and Richards' aluminum solder; the only new article the firm has to show is the "Flash Light" spark plug, with platinum iridium tips, in a variety of sizes, and at a popular price.

Two improvements are manifest in the Kilgore pneumatic shock eliminator, the most important being a change in the adjustment of the working cylinder proper. In last year's device eight small by-pass holes lined one side of the cylinder, but when after exhaustive tests it was found that the presence of so many holes did not afford sufficient resistance, six of the holes were done away with, leaving one each near the top and the bottom. Arguto wood piston rings have been substituted instead of steel rings. Originally wood was employed, and later steel, but the latter material was found to scratch the brass cylinder to an unnecessary degree, and this brought about a return to arguto wood.

Making the parts of a product that manufacturers either have not the facilities for making or do not care to make is the business of the Globe Machine & Stamping Co., Cleveland, which shows a comprehensive array of band brakes, brake drums, gear cases and stampings of all sorts. The company this year is making steel battery and tool boxes, that are unique, a wood lining having the effect of strengthening as well as rendering them practically noiseless when filled with either batteries or tools. The Radio-Escape, invented by Walter C. Baker, is another new product. It merely is a device to be applied to any radiator, and consists in sealing the radiator by closing the overflow, and screwing on the divice in place of the cap at the top. The claim is advanced that in winter it retains the vapor from the anti-freezing liquid within the radiator, necessitating refilling only after long service; while in summer the radiator can be filled with rain or distilled water, which does not produce tube-clogging lime scale, and the same water retained throughout the entire season.

Increased accessibility denotes the change in the Hill precision oilers, shown by the Precision Appliance Co., Chicago. On the new model oiler all the working parts are mounted on the cover and are removable with it, thereby making inspection of the working parts possible without removing the oil from the tank, a feature simplicity in itself. Apropos of lubrication, William C. Robinson & Sons Co. are represented with a large display of oils and greases, as also is Orlando W. Young and Adam Cook's Sons, the last named with its time-tried Albany grease. Young has concocted one new light oil and is showing the Cox vulcanizing clamp, so called, consisting of two metal clamps padded with felt, an instrument devised to hasten and make perfect patch repairs to inner tubes. The repaired tube is placed between the two felt-lined plates and the clamps screwed down. The felt, being soft, gives way at the thick portion of the patch and thus exerts an even pressure on the whole, making a quicker, easier and safer repair than by the old style method of pressure from the hand until the solution takes hold.

A small but very important change has been wrought in the Barrett automobile jack, manufactured by the Duff Mfg. Co., Pittsburg, Pa. Until this year the eccentric, or thumb screw, which reversed the movement, was contained at the side, which made manipulation difficult when the jack was in place under a wheel. The reversing lever now is in front of the frame alongside the operating lever and can be thrown up or down and thus reverses the movement without reaching in between the spokes of the wheel. Four new models are shown, the most striking an eight inch jack with a five inch raise, and a single acting jack for trucks. Cook's Standard Tool Co., Kalamazoo, Mich., also show the Standard jacks is a variety of sizes.

In addition to its electric speed indicator and rotary pumps, the Lipman Mfg. Co. has on its stand an electric odometer, without shaft, a dash board gasolene guage, and a special timer for Ford runabouts, all of which are new this season. The dashboard gasolene guage is a compact instrument with a scale denoting fifteen inches, and consists of a copper tube to be placed in the gasolene tank when it is desired to know the amount of fluid in the tank. The pressure of the fluid in the tank forces a colored liquid in the bottom reservoir of the instrument up a scale tube on the face of the dial, recording up to fifteen inches. The Hoffecker Co., of Boston, shows the Hoffecker speed indicator, and the Webb Mrfg. Co., Newark, N. J., has an interesting exhibit of various kinds and sizes of flexible shafting, as used in many of the well known speed indicators on the market to-day. A gasolene indicator, for dashboard use, is exhibited by the Edmund E. Hans Co., of Minneapalis.

The Comstock shock absorber, which is designed to be placed on a car at an angle of 45 degrees, is about the only one of that numerous family not exhibited at the previous show. It is of the hydraulic tribe. The chamber is filled with oil until the time of impact when the piston is depressed, forcing the oil through a recoil valve into the space behind the piston. At the point of greater depression the valve is unseated in which way care is taken of the spring recoil, allowing only a gradual resumption of the normal position of the spring, obviating the possibility of a break and preventing the personal discomfort of the shock or jar to the passengers.

To obtain a metal not heavier than aluminum, but with greater tensile strength, to retain the rough surface so that a finish easily may be given by the painters, to have the rigidity of steel and anti-rust qualities of the lighter metal, were some of the problems claimed to have been solved by the American Aluminum Coating Co., of Pittsburg, Pa., the result of their research in an exhibit of aluminum coated sheets, to be used for radiators, mud guards, panels for metal bodies, etc. Using a steel base, electrolysis is employed to coat it with aluminum or to plate it as one would obtain gold or silver plating. The surface of the coated steel not having the high polish that is given to pure aluminum sheets, it is unnecessary to rough or scarf it to enable the painters to apply a lasting coat of paint, and the greater strength of the steel base permits the use of a much lighter guage metal which about equalizes the weight with pure aluminum.

In respect to design, material, workmanship and finish of such commonplace articles as grease guns and gasolene primers, it would be difficult to excel those shown by the Randall-Faichney Co., of Boston. The firm is famous for their surgical instruments. They have shown the same care in the production of the tools that is found in their instruments. The novelty of the guns and primers is in the piston construction which employs solid brass without recourse to cork, leather, or rubber gaskets. The piston is ground to fit the cylinder and does so so perfectly that leakage behind it is impossible. The tips are made of seamless brass tubing, precluding the possibility of "joint leaks."

Some day it may be that bearings will have reached a stage of development when new designs will cease. That this time has not come is shown by the principal feature of the New Departure Mfg. Co., Bristol, Conn., whose exhibit is chiefly of an annular ball bearing that takes an end thrust and radial load, with twice the strength and double the load capacity. It is, in fact, two bearings in one. Two rows of balls with separator holding the balls in place, the rows being staggered, this separator performs no other function than to maintain the position of the balls; it does not in any way participate in the load carrying work of the bearing. The cone is a single grooved piece of steel and the raceways for the balls are in two pieces. When assembled the raceways, cones and balls fit into a case and are held in position by the edge of the case being spun over. The bearings are supplied in standard sizes in diameters and bore.

With some refinements in the Perfect Speed Indicator, shown in the basement of the Garden by S. Smith & Son, Ltd., they offer a novelty which they call the "Tourists' Companion," consisting in addition to the speed indicator of an eight day watch, barometer and compass, the whole mounted in compact form on a brass base, each instrument of sufficient size to be readily

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read from the seat. At first thought the use of a barometer and compass is not readily determined, but when one remembers the road book directions of E. NE. or South, and realizes how few people can keep their bearings in mind, the use of the compass is apparent, and many a cautious person, with the occasional rheumatic tendencies and past experience in tire repairs on a rainy roadside, will accept an unfavorable barometer reading as a direct reason for postponing an all day trip. This firm is showing also the "Perfect Duplex or Double Speed Indicator," to be placed in the limousine where it will indicate to the occupant a duplicate reading of the dash instrument. Constructed with a clock, season and trip odometer, with speed indicator and maximum hand is gives absolute knowledge of the pace of the car from the limousine seat. A communicating device within easy reach permits of a signal for more or less speed and in all ways the action of the chauffeur may be directed by the electric signal.

With a combination of three mechanical powers, the wedge, the screw and the nut, though in only two parts, a device for absolutely fastening automatically both the nut and bolt, constitute the exhibit of the Columbia Nut and Bolt Co., of Bridgeport, Conn. While this device has met with a very general acceptance in the railroad world, its adoption by the automobile industry has been sufficiently slow to be a cause of wonder. Realizing, as all practical automobilists must and do, the immense damage a floating bolt or nut can accomplish, not alone in a crank or transmission case, but on any part of a moving car, it is difficult to know why an inexpensive contrivance that will not slack back or work loose, that is easily adjusted and may be used on any car without change in its standard equipment, has not been universally adopted. The principal of the nut, for such is the designation of the whole thing, is a device consisting of an inner and outer part, which when assembled are a unit. The inner nut, which is threaded to receive the bolt, is slotted throughout its length and is tapered from above downward to fit and correspond with the toper of the outward or binding nut. By applying the wrench and tightening the nut in the usual way the nut working on the taper binds the bolt without dependence on a lateral strain to hold it in place. Though readily removed, it will not of itself work loose and its general adoption in the automobile trade where already many cars have accepted it, is surely a matter of but a short time.

The Ball trunnion suspension, which is exploited by the A. Z. Co., New York, is offered as a solution of the problem of relieving the lateral strain to which radiators are subjected when the going is rough. In the A-Z constructive method, a ball is fastened securely to each side of the radiator, near the bottom. A sliding bushing is recessed to fit the ball and its outside is turned to fit and rest in the support which is attached to the chassis. The ball in its socket permits of any twisting of the car frame, and the bushings allow for its spreading. The strain it is claimed is thereby entirely removed from the radiator which retains its normal relation to the engine by means of the rubber water line connection. Another contrivance also designed to relieve tanks or liquid carriers from strain is a cradle in which the force tank is carried without connection from it to the car save by the gasolene line.

Users of storage batteries frequently have cause to complain of the way in which acid deposits on the outside of the case corrode the terminals and connections to the serious detriment of the latter's contact efficiency. To render this corrosion impossible, The Kitsee Storage Battery Co., Scranton, Pa., exhibit cells with connections of burnt lead which is non-corroding. To the same end they are using brass binding screws which also are lead covered, while hollow tube vent caps minimize the chances of acid being spilled out by the car vibration.

In the storage batteries of Peerless Ignition Co., Brooklyn, N. Y., is disclosed a sealing compound to prevent acid leaks with their consequent corrosion, and as a further prevention of the latter the lead terminals are extended to the top of the jar. Rubber is used in the construction of the jars which are not of the compartment type. All rubber separators, both corrugated and fine perforated flat sheets, are used between the plates, the former for preventing short circuiting, the latter to keep all material intact.

THE EXHIBITORS AND THE WARES THEY EXHIBITED.

AUTOMOBILES.

Alden, Sampson Mfg. Co., Pittsfield, Mass.—One gasolene-electric tractor and two electric trailers.

Anderson Carriage Co., Detroit, Detroit electric cars—One coupe and one runabout.

Apperson Bros. Automobile Co., Kokomo, Ind., Apperson gasolene cars—Two 4-cylinder touring cars, one 4-cylinder limousine, one 4-cylinder roadster and one 6-cylinder roadster.

Autocar Co., Ardmore, Pa., Autocar gasolene cars—One 2-cylinder runabout, one 4-cylinder roadster, one 4-cylinder limousine, one 4-cylinder touring car and one 4-cylinder chassis.

Babcock Electric Carriage Co., Buffalo, Babcock electric cars—Three electric runabouts and one coupe.

Buick Motor Co., Flint, Mich., Buick gasolene cars—Two 4-cylinder chassis, one 2-cylinder touring car, two 4-cylinder roadsters, and two 4-cylinder touring cars.

Baker Motor Vehicle Co., Cleveland, Baker electric cars—One chassis, one roadster, one enclosed cab, one brougham, one runabout, one enclosed coupe, and one patrol wagon.

Cadillac Motor Car Co., Detroit, Cadillac gasolene cars—One 1-cylinder light delivery wagon, one 4-cylinder chassis, two 4-cylinder touring cars, one 4-cylinder limousine, one 4-cylinder roadster, one 1-cylinder runabout, one 1-cylinder touring car, and one 1-cylinder coupe.

Champion Wagon Co., Owego, N. Y., Champion electric commercial cars—One electric delivery wagon.

Columbus Buggy Co., Columbus, Ohio, Columbus electric cars—One chassis, one coupe, and two runabouts.

Corbin Motor Vehicle Corporation, New Britain, Conn., Corbin gasolene cars—One 4-cylinder air-cooled runabout racer, one 4-cylinder air-cooled roadster, one 4-cylinder water cooled chassis, one 4-ccylinder water cooled touring car, and one 4-cylinder air cooled model engine.

Electric Vehicle Co., Hartford, Conn., Columbia gasolene and electric cars—Two 4-cylinder touring cars, two 4-cylinder limousines, one 4-cylinder chassis, one 4-cylinder roadster, two electric enclosed carriages, one electric buggy, and one electric hansom.

Elmore Mfg. Co., Clyde, Ohio, Elmore gasolene cars—One 4-cylinder roadster, one 4-cylinder chassis, and two 4-cylinder touring cars.

Franklin Mfg. Co., Syracuse, N. Y.—One 4-cylinder runabout, one 4-cylinder model engine; one 4-cylinder landaulet, one 4-cylinder taxicab, two 4-cylinder touring cars, one 6-cylinder touring car, one 4-cylinder roadster, and one 4-cylinder 2,000 pound truck—all air cooled.

General Vehicle Co., Long Island City, N. Y., General Electric cars—One roadster, two runabouts, one limousine, two trucks, and one delivery wagon.

Haynes Automobile Co., Kokomo, Ind., Haynes gasolene cars—Five 4-cylinder touring cars.

Hewitt Motor Co., New York City, Hewitt gasolene commercial vehicles—One 4-cylinder chassis, one 4-cylinder 5-ton truck, one 1-cylinder light delivery wagon, and one 1-cylinder small omnibus.

Knox Automobile Co., Springfield, Mass., Knox gasolene cars—One 4-cylinder water cooled touring car, one 4-cylinder air cooled limousine, one 4-cylinder air cooled roadster, one 4-cylinder air cooled chassis, two 4-cylinder air cooled touring cars, one 2-cylinder air cooled 1½-ton truck, and one 4-cylinder air cooled 6,000 pound truck.

Locomobile Co. of America, Bridgeport, Conn., Locomobile gasolene cars—One 4-cylinder limousine, one 4-cylinder chassis, two 4-cylinder touring cars, one 4-cylinder roadster, and two 4-cylinder touring cars.

Lozier Motor Co., Plattsburgh, N. Y., Lozier gasolene cars—One 6-cylinder limousine, one 6-cylinder touring car, one 4-cylinder touring car, one 4-cylinder chassis, and one 4-cylinder model engine.

Matheson Motor Car Co., Wilkes-Barre, Pa., Matheson gasolene cars—One 4-cylin-

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21½ Per Cent

of all cars shown at the Madison Square Garden Show are equipped with

Midgley Universal Rims

and

38 Per Cent

of all detachable rims on cars in this Show are

Midgley Universal Rims

MIDGLEY

MIDGLEY

The Midgley Mannfactnring Co., Columbus Ohio

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der chassis, one 4-cylinder limousine, one 4-cylinder roadster, one 4-cylinder touring car, and one 4-cylinder demi-limousine.

Northern Motor Car Co., Detroit, Northern gasolene cars—One 2-cylinder touring car, one 2-cylinder limousine, one 2-cylinder chassis, and one 2-cylinder roadster.

Olds Motor Works, Lansing, Mich., Oldsmobile gasolene cars—One 4-cylinder roadster, one 6-cylinder touring car, two 4-cylinder touring cars, one 4-cylinder limousine, and one 4-cylinder chassis.

Packard Motor Car Co., Detroit, Packard gasolene cars—One 4-cylinder chassis, one 4-cylinder roadster, one 4-cylinder touring car, and one 4-cylinder limousine.

Peerless Motor Car Co., Cleveland, Peerless gasolene cars—One 6-cylinder model engine, one 6-cylinder touring car, one 4-cylinder touring car, one 4-cylinder chassis, one 4-cylinder roadster, and one 4-cylinder limousine.

Pierce Co., Geo. N., Buffalo, Pierce Great Arrow gasolene cars—One 6-cylinder chassis, one 4-cylinder semi-limousine, one 4 cylinder limousine, and two 6-cylinder touring cars.

Pope Mfg. Co., Hartford, Conn., Pope-Hartford gasolene cars—One 4-cylinder limousine, one 4-cylinder runabout, four 4-cylinder touring cars, one 4-cylinder roadster.

Pope Motor Car Co., Indianapolis, Pope-Waverly electric cars—Five runabouts, two enclosed coupes, one touring car and three delivery wagons.

Pope Motor Car Co., Toledo, Pope-Toledo gasolene cars—One 4-cylinder model engine, one 4-cylinder roadster, one 4-cylinder colonial limousine, one 4-cylinder limousine, and two 4-cylinder touring cars.

Rauch & Lang, Cleveland, R. & L electric cars—One chassis, one enclosed doctor's carriage and one limousine.

Royal Motor Car Co., Cleveland, Royal Tourist gasolene cars—One 4-cylinder chassis, one 4-cylinder touring car, and one 4-cylinder limousine.

Selden Motor Vehicle Co., Rochester, N. Y., Selden gasolene cars—Two 4-cylinder chassis, and one 4-cylinder touring car.

Simplex Automobile Co., New York City, Simplex gasolene cars—One 4-cylinder chassis, and one 4-cylinder touring car.

F. B. Stearns Co., Cleveland, Stearns gasolene cars—One 4-cylinder chassis, one 4-cylinder touring car, and one 6-cylinder roadster.

Stevens-Duryea Co., Chicopee Falls, Mass., Stevens-Duryea gasolene cars—Two 6-cylinder touring cars, one 6-cylinder chassis, one 6-cylinder limousine, and one 4-cylinder touring car.

Studebaker Automobile Co., South Bend, Ind., Studebaker gasolene and electric cars—Three electric runabouts, two electric commercial cars, one electric chassis, one electric truck, one electric delivery wagon, two 4-cylinder touring cars, one 4-cylinder chassis, one 4-cylinder roadster, and one 4-cylinder limousine.

E. R. Thomas Motor Co., Buffalo and Detroit, Thomas gasolene cars—One 6-cylinder touring car, two 4-cylinder touring cars, three 4-cylinder limousines, one 4-cylinder taxicab, and two 4-cylinder chassis.

Walter Automobile Co., Trenton, N. J., Walter gasolene cars—One 4-cylinder chassis, one 4-cylinder limousine, one 4-cylinder roadster, one 4-cylinder touring car, and one 4-cylinder demi-limousine.

Waltham Mfg. Co., Waltham, Mass., Waltham-Orient gasolene cars—One 4-cylinder air cooled runabout, one 1-cylinder air cooled runabout, one 2-cylinder water cooled runabout, one 2-cylinder water cooled roadster, and one 2-cylinder combination democrat and delivery wagon.

White Company, Cleveland, White steam cars—One runabout, two touring cars, and two limousines.

Winton Motor Carriage Co., Cleveland, Winton gasolene cars—One 6-cylinder chassis, one 6-cylinder roadster, one 6-cylinder touring car, and one 6-cylinder limousine.

Woods Motor Vehicle Co., Chicago, Woods electric cars—Three runabouts and one coupe.

TIRES, PARTS AND ACCESSORY EXHIBITS.

Atwater-Kent Mfg. Works, Philadelphia—Igniters and timers.

Autocoil Co., The, Jersey City, N. J.—Coils and ignition specialties.

Auto Pump Co., The, Springville, N. Y.—Pumps and specialties.

American Ball Bearing Co., Cleveland—Ball bearings.

American Electrical Novelty and Mfg. Co., New York City—Ever Ready batteries, lamps and tire specialties.

Auto Improvement Co., New York City—Self-starters and specialties.

Auto Accessories Mfg. Co., Detroit, Mich.—Tops, tire jackets and specialties.

American and British Mfg. Cd., Bridgeport, Conn.—Frames, motors, axles and parts.

Ajax-Grieb Rubber Co., New York City—Ajax automobile tires.

Aurora Automatic Machinery Co., Aurora, Ill.—Thor motors and components.

Avery Portable Lighting Co., Milwaukee, Wis.—Gas tanks.

Acetyvone Co., Niagara Falls, N. Y.—Carbide and lamps.

A. Z. Co., The, New York City—Hoods, radiators, tanks, etc.

Allers & Co., H. A., New York City—Metal polishes.

American Motor Co., Brockton, Mass.—M-M motor-cycles.

Auto Supply Mfg. Co., Brooklyn—Horns, tubing and brass specialties.

American Aluminum Coating Co., Pittsburg—Aluminum coated steels.

Allen Auto Specialty Co., New York City—Tire jackets and specialties.

Automobile Utilities Co., Boston—Supplies.

Aluminum Solder and Refining Co., New York City—Solder.

Briscoe Mfg. Co., Detroit—Hoods, tanks, radiators, etc.

Bosch, N. Y., Inc., Robert, New York City—Sims-Bosch magnetos.

Blue Ribbon Auto and Carriage Co., Bridgeport, Conn.—Bodies.

Bicycling World Co., The, New York City.

Benford, E. M.

Breeze Carburetter Co., Newark, N. J.—Breeze carburetters.

Bretz & Co., J. S., New York City—Ball bearings and high-tension magnetos.

Byrne-Kingston Co., Kokomo, Ind.—Kingston carburetters.

Baldwin Chain and Mfg. Co., Worcester, Mass.—Baldwin chains and recoil check.

Brennan Mfg. Co., Syracuse, N. Y.—Brennan motors.

Brown-Lipe Gear Co., Syracuse, N. Y.—Transmissions, differentials and steering gears.

Badger Brass Mfg. Co., New York City—Solar lamps and acetylene generators.

Bethlehem Steel Co., Bethlehem, Pa.—Drop forgings, parts, frames, etc.

Bowser & Co., Inc., S. F., Fort Wayne, Ind.—Gasolene and oil storage outfits.

Columbia Nut and Bolt Co., Inc., Bridgeport, Conn.—Columbia lock nuts.

Cook's Standard Tool Co., Kalamazoo, Mich.—Standard jacks.

Chandler Co., Springfield, Mass.—Name plates, hub caps, monograms, etc.

Cramp & Sons' Ship and Engine Building Co., The Wm., Philadelphia—Bronze castings and automobile parts.

Cook's Sons, Adam, New York City—Albany grease.

Carpenter Steel Co., New York City—Steels.

Consolidated Rubber Tire Co., New York City—Tires.

Cowles & Co., C., New Haven, Conn.—Lamps.

Chase & Co., L. C., Boston—Top and cover leathers.

Coes Wrench Co., Worcester, Mass.—Wrenches.

Connecticut Telephone and Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.

Continental Caoutchouc Co., New York City—Continental tires.

Champion Co., Albert, Boston, Mass.—Ignition specialties.

Columbia Lubricants Co., New York City—Lubricants.

Curtiss Mfg. Co., G. H., Hammondsport, N. Y.—Curtiss motor-cycles.

Comstock Shock Absorber Co., New York City—Shock absorbers.

Clover Mfg. Co., New York City—Grinding compound.

Diamond Rubber Co., Akron, Ohio—Diamond tires.

Dayton Electrical Mfg. Co., Dayton, Ohio—Ignition specialties.

Dietz Co., R. E., New York City—Lamps.

Duff Mfg. Co., Pittsburg, Pa.—Barrett jacks.

Dixon Crucible Co., Joseph, Jersey City, N. J.—Graphite lubricants.

Duane Co., Wm. J., New York City—Tops and slip covers.

Diamond Chain and Mfg. Co., Indianapolis—Diamond chains.

Delta Mfg. Co., Bloomfield, N. J.—Spark plugs.

Dow Tire Co., New York City—Dow puncture proof inner tubes.

Downing, Charles J., New York City—Supplies.

Eastern Carbon Works, Jersey City, N. J.—Batteries

Edmunds & Jones Mfg. Co., Detroit—Lamps and specialties.

Electric Storage Battery Co., Philadelphia—Accumulators.

English & Mersick Co., New Haven, Conn.—Automobile hardware.

Empire Auto Tire Co., Trenton, N. J.—Tires.

Empire State Tire Co., New York City—Tires.

Firestone Tire and Rubber Co., New York City—Firestone tires.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires.

Goodyear Tire and Rubber Co., Akron, Ohio—Goodyear tires.

G. & J. Tire Co., Indianapolis, Ind.—G. & J tires.

Gray & Davis, Amesbury, Mass.—Lamps.

Globe Machine and Stamping Co., Cleveland—Metal stampings.

Goodrich Co., B. F., New York City—Tires.

Gilbert Mfg. Co., New Haven, Conn.—Tire jackets, lamp covers and rubber cloth specialties.

Gray-Hawley Mfg. Co., Detroit, Mich.—Chime whistles and cut-out mufflers.

Gabriel Horn Mfg. Co., Cleveland, Ohio—Gabriel horns.

Gemmer Mfg. Co., Detroit, Mich.—Steering gears and parts.

Gould Storage Battery Co., New York City—Storage batteries.

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Glaenzer & Co., New York City—Nieuport magnetos.

Geiszler Bros., New York City—Storage batteries.

Hess-Bright Mfg. Co., Philadelphia—Bearings.

Hartford Suspension Co., New York City—Hartford-Truffault shock absorbers.

Hyatt Roller Bearing Co., Harrison, N. J.—Bearings.

Hartford Rubber Works Co., Hartford, Conn.—Hartford tires.

Hardy Co., R. E., New York City—Sta-Rite spark plugs and ignition specialties.

Hotchkin Mfg. Co., Chicago—Anti-jolt device.

Herz & Co., New York City—Timers, plugs and ignition specialties.

Holley Bros. Co., Detroit—Carburetters and magnetos.

Hamm Mfg. Co., C. T., Rochester, N. Y.—Lamps.

Hoffecker Co., Boston, Mass.—Speed indicators

Hancock Mfg. Co., Charlotte, Mich.—Oilers, tank gages and fittings.

Healy Leather Tire Co., New York City—Tires.

Havoline Oil Co., New York City—Lubricants.

Harris Oil Co., A. W., Providence, R. I.—Lubricants.

Hopewell Bros., Cambridge, Mass.—Tire cases.

Hicks Speed Indicator Co., Brooklyn—Speed indicators.

Heinze Electrical Co., Lowell, Mass.—Coils and ignition equipment.

Hartford Auto Parts Co., Hartford, Conn.—Universal joints and automobile parts.

Index Speed Indicator Co., Minneapolis, Minn.—Index speed indicators.

Indestructible Steel Wheel Co., Chicago.—Steel wheels.

Igniter Appliance Co., Cleveland—Ignition specialties.

Jones Speedometer Co., New York City—Jones speedometers, annunciators, odometers, speed regulators and specialties.

Jeffrey-Dewitt Co., Newark, N. J.—Spark plugs.

Johnson & Co., Isaac O., Spuyten Duyvil, N. Y.—Forgings and castings.

Jones & Co., Phineas, Newark, N. J.—Wheels.

Kalb & Berger Mfg. Co., New York City—

King Optical Co., Julius, New York City—Goggles.

Kitsee Storage Battery Co., Scranton, Pa.—Storage batteries.

Kilgore Mfg. Co., Old Town, Me.—Pneumatic shock eliminators.

Light Mfg. and Foundry Co., Pottstown, Pa.—Automobile parts and castings.

Leather Tire Goods Co., Newton Upper Falls, Mass.—Non-skid covers and leather inner tubes.

Lipman Mfg. Co., Beloit, Wis.—Speed indicators, gasolene gauges and odometers.

Lavalette & Co., Importers, New York City—Magnetos and ignition specialties.

Livingston Radiator Co., New York City—Radiators.

Loring Auto Appliance Co., New York City—Speed gauges

Morgan & Wright, Detroit—Morgan & Wright tires.

Motsinger Device Co., Pendleton, Ind.—Motsinger automobile sparker.

Midgley Mfg. Co., Columbus, Ohio—Midgley rims and wheels.

Mosler & Co., A R., New York City—Spark plugs.

Motor Car Specialty Co., Philadelphia—Speed indicators and specialties.

Muncie Auto Parts Co., Muncie, Ind.—Parts.

Manhattan Screw and Stamping Works, New York City—Lamps, horns and tire carriers.

Miller, Charles E., New York City—Brampton chains and automobile supplies and accessories of all kinds.

Masury & Son, John W., Brooklyn—Varnishes.

Michelin Tire Co., Milltown, N. J.—Michelin tires.

Merchant & Evans Co., Philadelphia—Multiple disc clutches and automobile fittings.

Manhattan Auto Top and Body Co., New York City—Bodies, tops and wind shields.

Mutty & Co., L. J., Boston—Top fabrics.

Mann, Leon, New York City—Clothing.

Motz Clincher Tire and Rubber Co., New York City—Tires.

Manufacturers' Foundry Co., The, Waterbury, Conn.—Castings.

National Carbon Co., New York City—Batteries.

N. Y. and N. J. Lubricants Co., New York City—Lubricants.

National Battery Co., New York City—Batteries.

Noera Mfg. Co., Waterbury Conn.—Specialties.

New York Sporting Goods Co., New York City—Accessories.

New Departure Mfg. Co., Bristol, Conn.—Coaster brakes, bells and annular ball bearings.

National Oil Pump and Tank Co., Dayton, Ohio—Storage tanks.

Norton & Co., New York City—Carborundum grinder and emery supplies.

Newmastic Tire Co., New York City—Compound tire filler.

Norris Auto Co., Saginaw, Mich.—Tire protectors.

Oliver Mfg. Co., Chicago—Jacks and accessories.

Precision Appliance Co., Chicago—Hill precision oilers.

Pennsylvania Rubber Co., Jeanette, Pa.—Tires.

Pittsfield Spark Coil Co., Dalton, Mass.—Ignition specialties.

Pantasote Co., New York City—Top and upholstery leather.

Prest-O-Lite Co., New York City—Gas tanks and tire inflators.

Prosser & Son, Thomas, New York City—Krupp steel.

Patterson, Gottfried & Hunter, Ltd., New York City—Tool outfits and specialties.

Post & Lester Co., Hartford, Conn.—Supplies and specialties.

Peerless Igniter Co., Brooklyn—Ignition specialties.

Perfection Spring Co., Cleveland—Springs.

Pierson Supply Co., Brooklyn—Supplies.

Remy Electric Co., Anderson, Ind.—Magnetos.

Rose Mfg. Co., Philadelphia—Lamps.

Republic Rubber Co., Youngstown, Ohio—Tires.

Robinson & Sons Co., William C., Brooklyn—Greases and lubricants.

Rands Mfg. Co., Detroit, Mich.—Tops and accessories.

Randall-Faichney Co., Boston, Mass.—Oil guns.

Rushmore Dynamo Works, Plainfield, N. J.—Lamps.

Reilly & Sons, P., Newark, N. J.

Splitdorf, C. F., New York City—Ignition specialties.

Shelby Steel Tube Co., Pittsburg—Tubing.

Schwartz Wheel Co., Philadelphia—Wheels.

Swinehart Clincher Tire and Rubber Co., Akron—Swinehart tires.

Stewart & Clark Mfg. Co., Philadelphia—Speed indicators.

Standard Welding Co., Cleveland—Tubing and electrically welded parts.

Sager Co., J. H., Rochester, N. Y.—Supplementary springs.

Spicer Universal Joint Mfg. Co., Plainfield, N. J.—Universal joints.

Smith Mfg. Co., R. H., Springfield, Mass.—Springfield motometers.

Standard Roller Bearing Co., Philadelphia—Bearings.

Sprague Umbrella Co., Norwalk, Ohio—Tops and wind shields.

Springfield Metal Body Co., Springfield, Mass.—Bodies and tops.

Sherwin-Williams Co., The, Newark, N. J.—Paints and varnishes.

Stackpole Battery Co., St. Mary's, Pa.—Batteries.

Shaler Co., C. A., Waupun, Wis.—Electric vulcanizers.

Smith & Son, Ltd., S., New York City—Speed indicators.

Stanley, John T., New York City—Cleaning compound.

Standard Brake Co., New York City—Brakes

Timken Roller Bearing Axle Co., Canton, Ohio—Bearings and axles.

Traver Blow-out Patch Co., New York City—Tire repair outfits.

Troy Carriage and Sunshade Co., Troy, Ohio—Tops.

Turner Brass Works, Sycamore, Ill.—Harroun automobile bumper.

Uncas Specialty Co., New York City—Leavitt timers and distributors and specialties.

Veeder Mfg. Co., Hartford, Conn.—Odometers and speed indicators.

Vesta Accumulator Co., Chicago—Batteries.

Voorhees Rubber Mfg. Co., New York City—Rubber goods.

Ventilated Cushion and Spring Co., Jackson, Mich.—Ventilated cushion system.

Vacuum Oil Co., Rochester, N. Y.—Lubricants.

Victor Shock Absorber Co., New York City—Shock absorbers.

Valentine & Co., New York City—Varnishes.

Webb Mfg. Co., Newark, N. J.—Flexible shafting.

Warner Instrument Co., Beloit, Wis.—Warner auto-meters.

Warner Gear Co., Muncie, Ind.—Gears and parts.

Whitney Mfg Co., Hartford, Conn.—Whitney chains and keying system.

Whitlock Coil Pipe Co., Hartford, Conn.—Radiators and automobile parts.

Witherbee Igniter Co., New York City—Witherbee storage batteries and Wico spark plugs.

Wheeler, F. H., Indianapolis, Ind.—Schebler carburetters.

Weed Chain Tire Grip Co., New York City—Non-skid chains.

Winchester Speedometer Co., New York City—Speed indicators.

Wray Pump and Register Co., Rochester, N. Y.—Tire pumps and registers.

Watres Mfg. Co., New York City—Exhaust horns.

Young, O. W., Newark, N. J.—Oils and lubricants.

MOTORCYCLES.

American Motor Co., Brockton, Mass., M-M motor-cycles—Three 1-cylinder motor bicycles.

Baker & Co., F. A., New York City, Motorcycles and supplies—One 1-cylinder Indian motor bicycle.

Curtiss Mfg. Co., G. H., Hammondsport, N. Y., Curtiss motor-cycles—Two 1-cylinder, one 2-cylinder and one 8-cylinder motor bicycles.

Consolidated Mfg. Co., Toledo, Ohio, Yale-California motor-cycles—Two 1-cylinder motor bicycles.

Excelsior Motor and Mfg. Co., Chicago, Excelsior and Triumph motor-cycles—Three 1-cylinder motor bicycles.

Hendee Mfg. Co., Springfield, Mass., Indian motorcycles—Two 2-cylinder motor bicycles, two 1-cylinder motor bicycles, one 2-cylinder delivery van, one 2-cylinder tricar and one 2-cylinder tricycle.

Light Mfg. and Foundry Co., Pottstown, Pa., Light motorcycles—Two 1-cylinder motor bicycles.

Merkel Motor Co., Milwaukee, Wis., Merkel motorcycles—Two 1-cylinder motor bicycles.

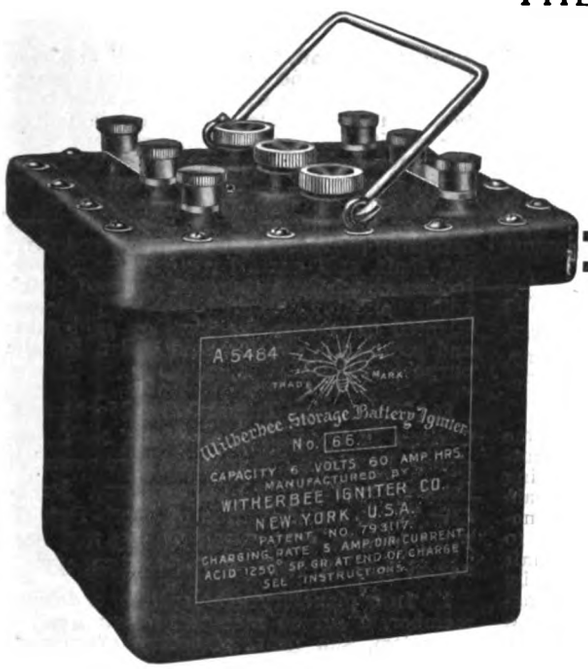
Shirley, Amos, New York City, Styria, R-S and Indian motorcycles—Three 1-cylinder and two 2-cylinder motor bicycles.

N. S. U. Cycle and Motor Co., New York City, N. S. U. motorcycles—Three 1-cylinder and two 2-cylinder motor bicycles and one 2-cylinder tricar.

Ovington Motor Co., New York City, F. N. motorcycles—One 4-cylinder and one 1-cylinder motor bicycle and one 4-cylinder tricar.

Reading Standard Mfg. Co., Reading, Pa., R-S motorcycles—Three 1-cylinder motor and one 2-cylinder motor bicycles, one 1-cylinder motor tandem, one 1-cylinder convertible tricycle and one 1-cylinder delivery van.

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The Witherbee Is Not A Drone

A Drone Bee—a "tramp" hasn't much chance in a hive of "active workers"—he soon finds himself on the outside.

A sleepy, forgetful Ignition System is no better than the "drone" bee. It isn't of any use to your car. The most industrious Battery on the market to-day is the

WITHERBEE

Its use means perfect Ignition; means new life to the car; means less cost of "up-keep."

Exhibit at Madison Square Garden Show

WITHERBEE IGNITER COMPANY
541 WEST 43d STREET, NEW YORK

CHICAGO,
1429 Michigan Ave.

DETROIT,
220 Jefferson Ave.

BALTIMORE OFFICE
510 Continental Trust Bldg.

Witherbee

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The Week's Patents.

864,111. Carburetter. Frank W. Sickles, Hartford, Conn. Filed Nov. 9, 1906. Serial No. 342,709.

1. A carburetter comprising an annular axially vertical receptacle having a central upwardly open passage therethrough, and having a tube vertically and centrally disposed within said passage open at top and bottom, a nozzle tube centrally within, and separated from the walls of, said tube, and a valve provided way leading from the annular receptacle to said nozzle tube, a cylindrical enlarged casing provided above the receptacle and to center of which said central opening in the receptacle communicates, and having a tangentially located conduit leading therefrom towards the cylinder, an axially vertical rotary.

864,135. Spark Plug. Charles A. Mezger, New York, N. Y. Filed Dec. 26, 1906. Serial No. 349,505.

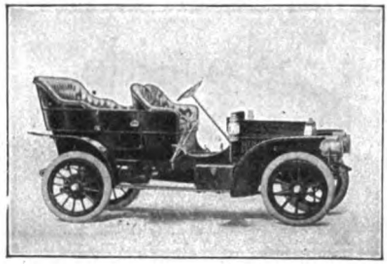
1. In a spark plug, a shell or body, an insulation member therein with an annular enlargement, a bushing screwing into the shell and surrounding the insulation member and an annulus of relatively soft metal surrounding the insulation member at said enlarged portion, the annulus having its edges beveled in the same direction, one of such edges engaging the enlargement of the insulation and the other edge being engaged by the bushing, whereby when the bushing is screwed home, the annulus is caused to expand against the enlarged portion of the insulation and to contract against the main portion of the insulation.

864,243. Variable Speed and Reversing Gear. William S. Hovey, Three Rivers, Mich., assignor to Sheffield Car Company, Three Rivers, Mich. Filed Aug. 4, 1905. Serial No. 272,701.

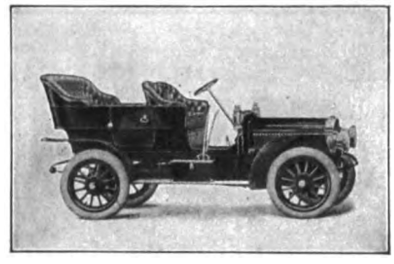
1. The combination with a suitable frame of a driving shaft; a sleeve revolubly mounted thereon; a gear secured to said driving shaft; a gear secured to said sleeve; a main drum or casing; a set of connected planetary gears, two of which are arranged to mesh with said gears on said driving shaft and sleeve; a spindle therefor carried by said main drum; an auxiliary drum or casing revolubly mounted on said sleeve; a gear revolubly mounted on said sleeve, secured to said auxiliary drum, and arranged to mesh with one of said planetary gears; means for locking said drums against rotation; a friction plate carried by said driving shaft, arranged to engage said main drum for locking the same to said driving shaft; a sprocket wheel; a driven shaft on which said sprocket wheel is mounted; a gear on said driven shaft; a pair of gears revolubly mounted on said sleeve and driving shaft, said gears having inwardly projecting clutch jaws thereon; a jawed clutch collar slidably secured to said sleeve, adapted to engage the jaws on said gear; and means for shifting said collar, for the purpose specified.

864,258. Power Transmission Mechanism. Carlton R. Radcliffe, New York, N. Y., assignor, by direct and mesne assignments, to International Patent Corporation, Jersey City, N. J., a Corporation of South Dakota. Filed June 24, 1905, Serial No. 266,767. Renewed July 18, 1907. Serial No. 284,413.

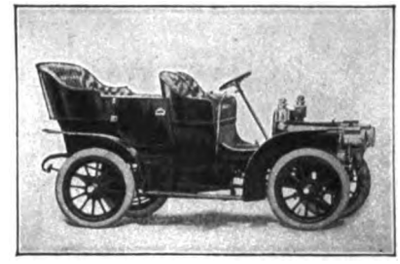
1. In a planetary gear system, a driving member, a driven member, a sun gear, a secondary sun gear, planetary gears ar-



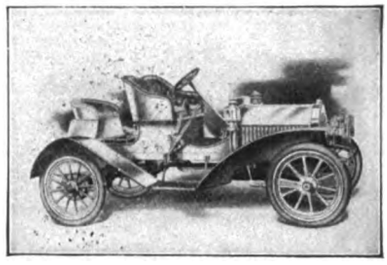
Model G Touring Car.....$2,000
25 H. P. Four Cylinder.



Model H Touring Car
30 H. P. Four Cylinder.



Model T. $1,000
10 H. P. Single Cylinder.



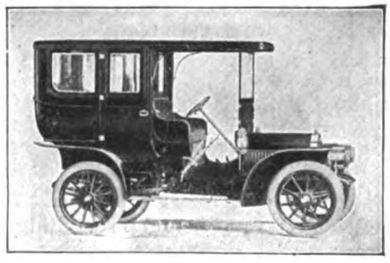
Model G Runabout.....$2,000
25 H. P. Four Cylinder.

Cadillac

Will be exhibited at Madison Square Garden, November 2-9.



Model S Runabout.
10 H. P. Single Cylinder.



Model G Limousine.....$3,000
Model Limousine.....$3,600



Model T Coupe.....$1,350
10 H. P. Single Cylinder.



Model M Delivery.
10 H. P. Single Cylinder.

CADILLAC MOTOR CAR CO., Member Association Licensed Automobile Manufacturers **DETROIT, MICH.**

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ranged to mesh with both of said sun gears, and means of shifting one of said sun gears and bringing it into engagement with the other sun gear, and co-operating brake mechanism.

864,313. Explosive Engine. John J. Leary, Rochester, N. Y., assignor to Rochester Gas Engine Company, Rochester, N. Y., a Corporation of New York. Filed Sept. 25, 1906. Serial No. 336,167.

1. In an explosive engine, means for preventing the passage of gases through the bearings, comprising bearing caps, V-shaped grooves one half of the groove being formed in said caps and the other half in the engine body and together forming inverted V-shaped semi-circular grooves, packing in said groove and means for compressing said packing.

Better Because Regular

An Oberdorfer Pump never "sticks." It works day in and day out in a uniform manner.
Is yours an Oberdorfer?
M. L. Oberdorfer Brass Co.,
Water St., Syracuse, N. Y.

DRAGON
Touring Car $2100 Roadste $1850
TWO "HAPPY MEDIUM" CARS.
Not too heavy—not too light,
Not too costly—price just right.
DRAGON AUTOMOBILE CO.,
30th, 31st and Chestnut Sts., Philadelphia, Pa.



Gilbert Supplies
THE ONLY ONES WORTH HAVING
Catalog on Request
GILBERT MFG.CO.
NEW HAVEN, CONN.

The Hardy Troubleless **Mitchell** $2000
Will do anything any car will do and do it Better and Quicker. We'll PROVE this on the road any time you say. Call at any Mitchell Branch any time and be "shown." Mitchell Motor Car Co., 276 Mitchell Street, Racine, Wis.
Member American Motor Car Mfrs. Ass'n, N. Y.

LOGAN TRUCKS
The Logan Construction Co.
CHILLICOTHE, OHIO

SAGER SPRINGS
ELIMINATE SHOCKS
Economical and Serviceable—Over 10,000 in use
J. H. SAGER COMPANY, Rochester, N. Y.

MICHELIN
FRANCE ENGLAND
ITALY AMERICA
MICHELIN TIRE CO., Milltown, N. J.

THE MARMON
"A Mechanical Masterpiece"
For catalog, address Dept. 16.
NORDYKE & MARMON CO.
(Estab. 1851) INDIANAPOLIS, IND.

1907 WHITLOCK COOLERS
Manufactured by
The Whitlock Coil Pipe Co.
Hartford, Conn., U. S. A.
Will be the standard for high grade cars.
We are now closing contracts for 1908.

EISEMANN-LAVALETTE
Magnetos
LAVELETTE & CO.,
112 W. 42d St., New York

The Highest Standard of Efficiency Ever Offered In Any Commercial Rubber Tire At Any Price

Hartford Solid Motor Tires are absolutely protected from rust by the method of fastening them to the rims.

Hartford Solid Motor Tires are fastened in place by longitudinal wires imbedded and vulcanized in the body of the tire itself.

Hartford Solid Motor Tire retaining wires never come in contact with the moisture from the streets—hence

Hartford Solid Motor Tires are absolutely water-proof and are never affected by rust.

Hartford Solid Motor Tires are held in place by compression and in addition are clamped into position by side flanges—hence

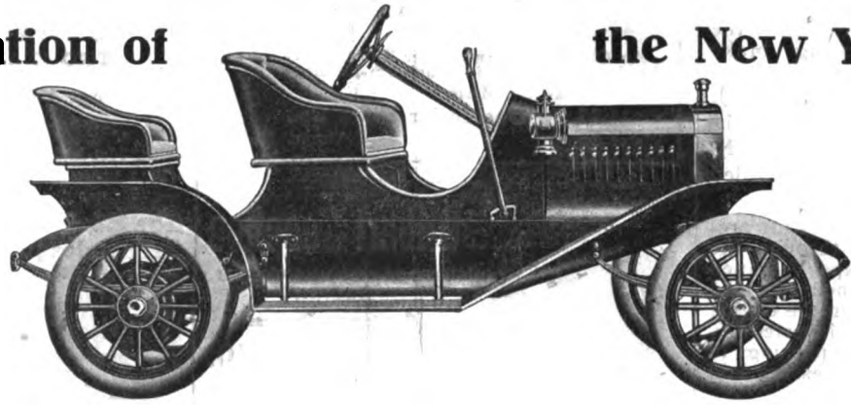
Hartford Solid Motor Tires Never creep.

The Hartford Rubber Works Co., Hartford, Conn.

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The Sensation of the New York Show

$800 **$800**



THE LAMBERT 18 FRICTION FLYER

"The Car Without A Gear Box"

SPECIFICATIONS.

CAPACITY—Three passengers. WHEEL BASE—95 inches. TREAD—56 inches. FRAME—Pressed steel. WHEELS—30-inch, wood artillery. TIRES—30x3 inch Michelin. MOTOR—2-cylinder opposed, 18 h. p. TRANSMISSION—Friction. SPEED—1 to 35 miles an hour. CARBURETOR—Float feed. IGNITION—Jump spark. RADIATOR—Honeycomb. DRIVE—Single chain to rear axle, encased. BRAKE—External on each rear hub. BEARINGS—Hyatt Roller and Standard Ball. CLEARANCE—12 inches. GASOLINE CAPACITY—12 gallons. LENGTH OF BODY, from inside of dash—76 inches. WIDTH OF BODY, to ouside mud guard—63 inches. WIDTH OF BODY—32 inches. WIDTH OF FRONT SEAT—36 inches inside of cushion. WIDTH OF REAR SEAT—18 inches inside of cushion. HEIGHT OF FLOOR FROM GROUND—29 inches PAINTING—French gray. UPHOLSTERING—Fine quality of leather; springs in cushions and backs of seats. WEIGHT—1,350 pounds. EQUIPMENT—Two oil lamps, horn and full tool equipment. PRICE—$800 complete, f. o. b. factory.

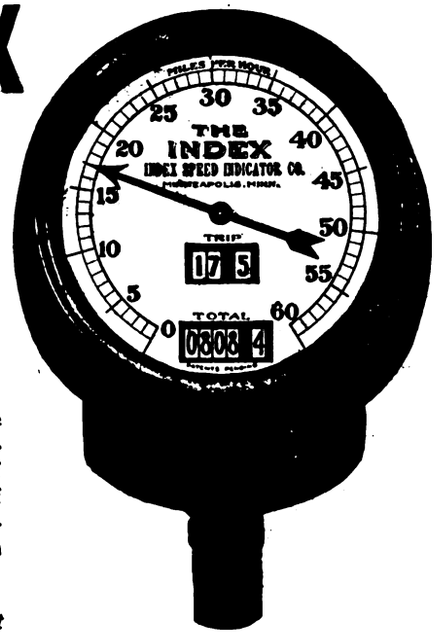
No car on the floor at the New York Show attracted so much attention as the Lambert 18. Sold at a price that absolutely precludes comparison. In value it has a field all to itself. Built to stand the hardest service, its solid, substantial appearance and correct lines of construction made it the "raciest" looking car of the lot. If you are looking for a runabout, see the Lambert 18—it will be a case of "love at first sight!"

THE BEST VALUE IN AMERICA AT THE PRICE.

Easily controlled. Is simplicity itself. Always ready to go and will keep on going until it gets there—and at any desired speed up to 35 miles an hour.

THE BUCKEYE MANUFACTURING COMPANY, *A Few Good Agents Wanted* **ANDERSON, INDIANA**

INDEX
Speed Indicator



THE ACME OF PERFECTION

Visit us at the show and let us explain the merits of THE INDEX, if you are not acquainted with them already.

Write for Booklet

INDEX SPEED INDICATOR CO.

FORMERLY
OLIVER INSTRUMENT CO.

MINNEAPOLIS, MINN.

HOTEL EUCLID

CLEVELAND, OHIO



"NIGHT CONTROL"

for visiting automobilists. ¶First-class in every respect. ¶The most attractive grill room in town. ¶Music and good cheer await you. ¶Give it a trial.

FRED S. AVERY, - - - Manager

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CONTINENTAL

ALL THAT A MOTOR CAR SHOULD BE

A Winner in all Prominent Events Last Season.

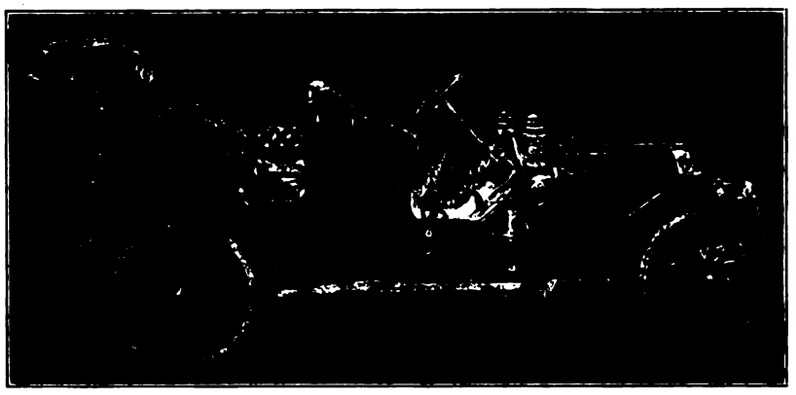
CAR THAT'S MADE GOOD

Write for agency for unassigned territory; a valuable asset for any dealer.

A Car with a proud record, and glorious future.

THE CONTINENTAL AUTO MFG. CO.

New Haven, Conn.



Model C, 35-40 H. P. 6-Passenger, $3,000.

Empire Tires

WEAR LONGEST

Empire Auto Tire Co., Trenton, N. J.

New York—Broadway & 73d St.; 148 Chambers St.
Chicago—20 LaSalle St.; 1615 Wabash Ave.
Boston—292 Devonshire St.
Buffalo—9 W. Huron St.
Philadelphia: Penn. Auto Supply Co.
Providence—Waite Auto Supply Co.
Seattle, Wash.—Fobes Auto Supply Co.

1908 Locomobile

Combines Proved Reliability With Increased Efficiency and Low Cost of Up-Keep

AUTOMOBILE FRAME STEELS

We produced most of the Cold Rolled High Carbon Basic and Special Alloy Steels used in high grade 1908 cars and our preparations for the new season will be adequate. No unreasonable delays if you specify "Columbia" Steels.

HIGH CARBON BASIC OPEN HEARTH
CHROME NICKEL ALLOY, VANADIUM ALLOY

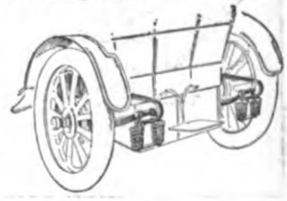
THE COLUMBIA STEEL COMPANY
ELYRIA, OHIO

A NEW SENSATION

Equip your car with

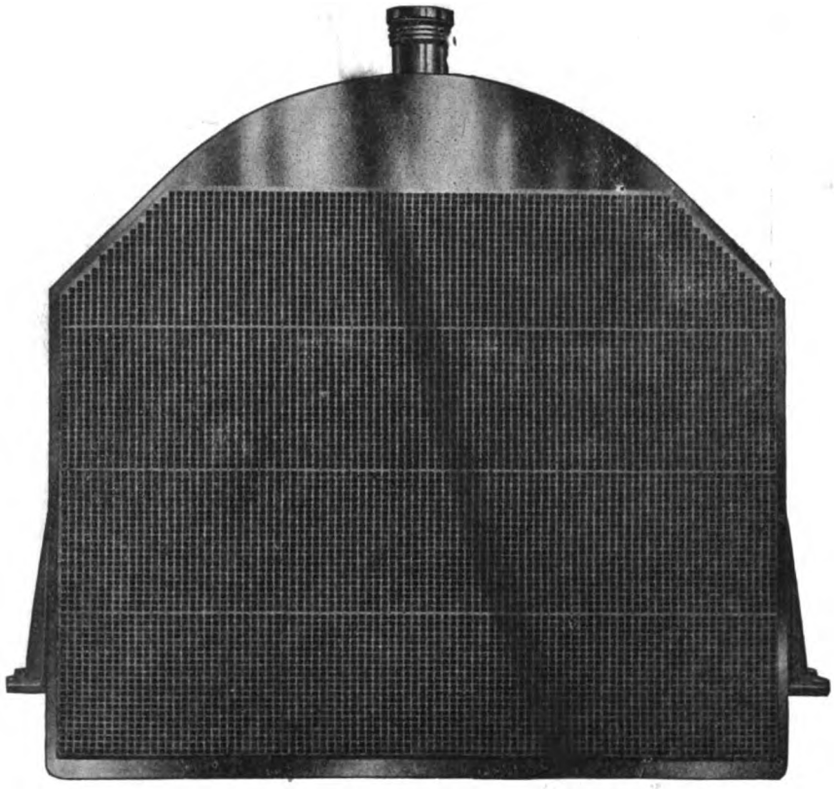
Supplementary Spiral Springs

and notice the difference. No jolts, no jars, no broken springs, or dislocated joints. The "Thank-ye-marms" will still be with you, but you won't know it. Our new booklet is very interesting, and is yours for the asking.



Supplementary Spiral Spring Co.
4555 Delmar Ave., St. Louis
New York Branch, 52 West 67th Street

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¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

¶ **The Mayo Radiator** is **The Quality Radiator.**

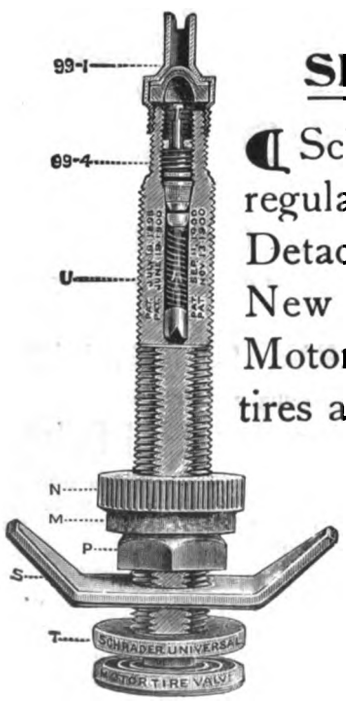
¶ If you are a **Quality Maker** better write us at once.

HONEYCOMB, CELLULAR OR FLAT TUBE TYPES.

MAYO RADIATOR COMPANY, New Haven, Conn.

Schrader Universal Valve

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 797 Motor Tire Valve is the standard for 2½-inch and 3-inch tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

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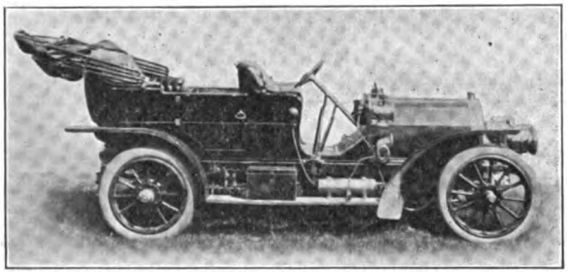
A. SCHRADER'S SONS, Inc., 28-30-32 Rose Street, New York

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PENNSYLVANIA

TYPE C

Pennsylvania 50



A motor car faultlessly made of chrome nickel steel—and annular bearings—a valve-in-the-head motor of 50 H. P. and the price $2800.00.

PENNSYLVANIA AUTO MOTOR CO.

BRYN MAWR, PA.



ALLEN

The Best

LOOK FOR THE NAME.

TIRE COVERS

Glove fitting—Glove fastening. Best enamel duck, $4.00 and $4.50. Handled exclusively at all Fisk Branches.

TIRE HOLDERS

Adjustable—detachable—1 to 3 tires. Parsons' Manganese Bronze—per set, $12.00.

TIRE LOCKS

Prevents theft of tires—holds two 5-in.—Parsons' Manganese Bronze, $10.00. Cheaper ones; single, $4.00; double, $5.50.

LAMP COVERS

Best grade rubber-coated Drill. Perfect fit, $1.00 to $1.50.

EVERYTHING GUARANTEED SATISFACTORY.

THE ALLEN AUTO SPECIALTY CO., Manufr's., 1931 Broadway, New York City

To the Man Who Is His Own Chauffeur

"Maxwell"

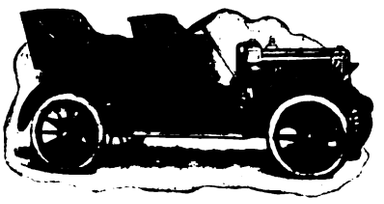
cars appeal most strongly.

The marvelous simplicity of mechanism eliminates the necessity of a technical course and enables the owner to know his car in an incalculably short time.

Did you read that story in the Outlook of October 5th about the man with the "Get-there" car? He went from St. Louis, Missouri, to Maine—and back, bumped all kinds of weather and road conditions, but he came through—and we couldn't see how that "Get-there" car could be anything but a "MAXWELL," so we asked him. And—well you can't mistake the performance of a "MAXWELL," even under a nom-de-plume—we guessed right.

There are 8,000 other "MAXWELL" owners who are just as proud of their cars as the man with the "Get-there."

If you don't know the "MAXWELL" line—if you have never ridden in one of these cars, write to me personally, Dept. 2, and I will see that you get a "MAXWELL" demonstration.



The new four-cylinder 26 H. P. Model D "MAXWELL" is already breaking records in sales—and why shouldn't it at $1,750?—when it offers all the efficiency of cars costing infinitely more. It is the triumph of J. D. Maxwell's career.

The 14 H. P. Tourabout at $825 and 20 H. P. double cylinder touring car at $1,450, were oversold last year and may be again this year, in spite of the fact that our new factory at New Castle, Indiana, has facilities for turning out 10,000 cars a year.

Get your "MAXWELL" demonstration without delay.

Benj. Briscoe President.

Maxwell-Briscoe Motor Co.

Members A. M. C. M. A.

40 Mt. Pleasant Street, Tarrytown, N. Y.

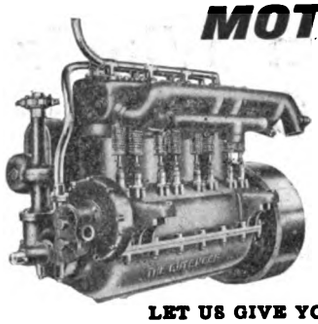
FACTORIES:

Chicago, Ill., Pawtucket, R. I., New Castle, Ind.

DEALERS IN ALL LARGE CITIES

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that's what we are. We have made the motors in some of the most successful cars, for years. Quality before price, and BOTH right.

The "Rutenber" Carburetor

which as motor experts we picked as the best in the world, we are now making and selling.

LET US GIVE YOU INFORMATION.

THE WESTERN MOTOR CO., Logansport, Ind.

Manufacturers of "Rutenber" Motors, "Rutenber" Carburetors, and Supplies. Light Soft Gray Iron, Brass and Aluminum Castings.

KINWOOD AUTOMOBILE PARTS.

ONE QUALITY—THE BEST.

OUR LEADERS:

Kinwood Perfection Radiators
and
Kinwood Mechanical Oilers.

KINWOOD PRESSED STEEL SPECIALTIES:

Frames, hoods, dashes, fenders, gasolene and water tanks, mufflers, dust and drip pans, radiator fans, gasolene gauges, fittings, couplings, etc., etc.

Large facilities and dependable deliveries.

K. FRANKLIN PETERSEN,
166 Lake St., Chicago,
Western Representative.

THOMAS J. WETZEL,
11 Warren St., New York,
Eastern Representative.

THE KINSEY MFG. CO., Dayton, Ohio.

McCORD
LUBRICATORS—RADIATORS

"Marks of a Good Motor Car"

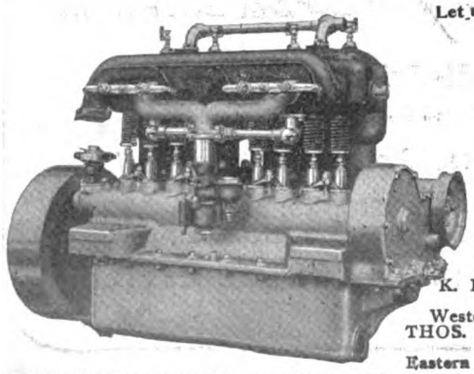
McKIM COPPER-ASBESTOS GASKETS

McCORD & COMPANY

NEW YORK OFFICE
24 Broad Street

Old Colony Building
CHICAGO

CONTINENTAL MOTORS ARE STANDARD



Let us quote you on 4-cylinder motors for 1908

THREE SIZES
4¼ in. x 4½ in.
4¾ in. x 5 in.
5 in. x 5 in.

4-cylinder with self-contained oiling system.

Motors are ready for coupling any standard magneto.

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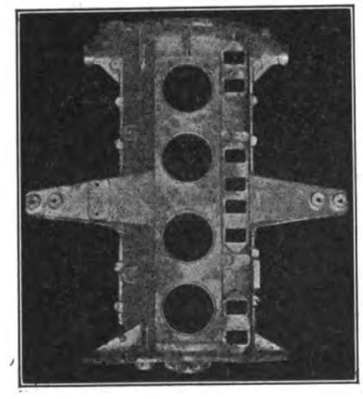
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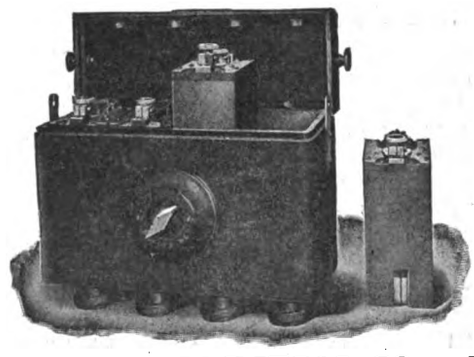
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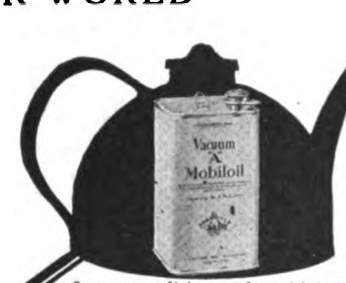
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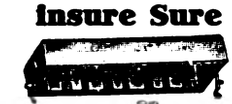
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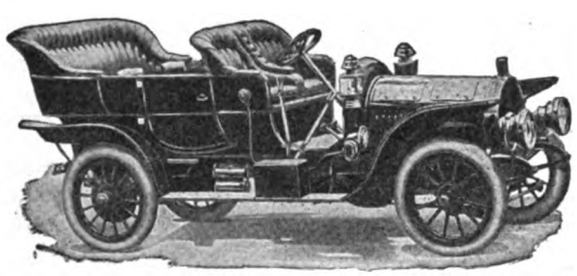
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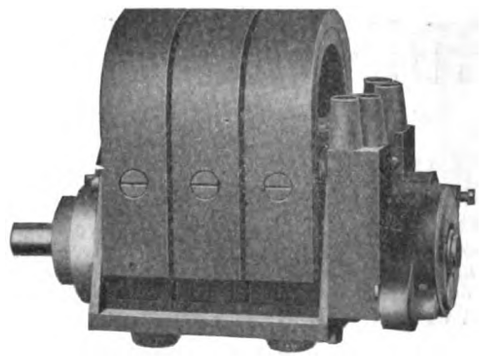
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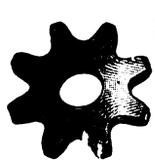
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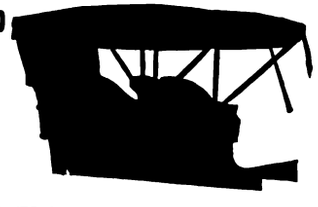
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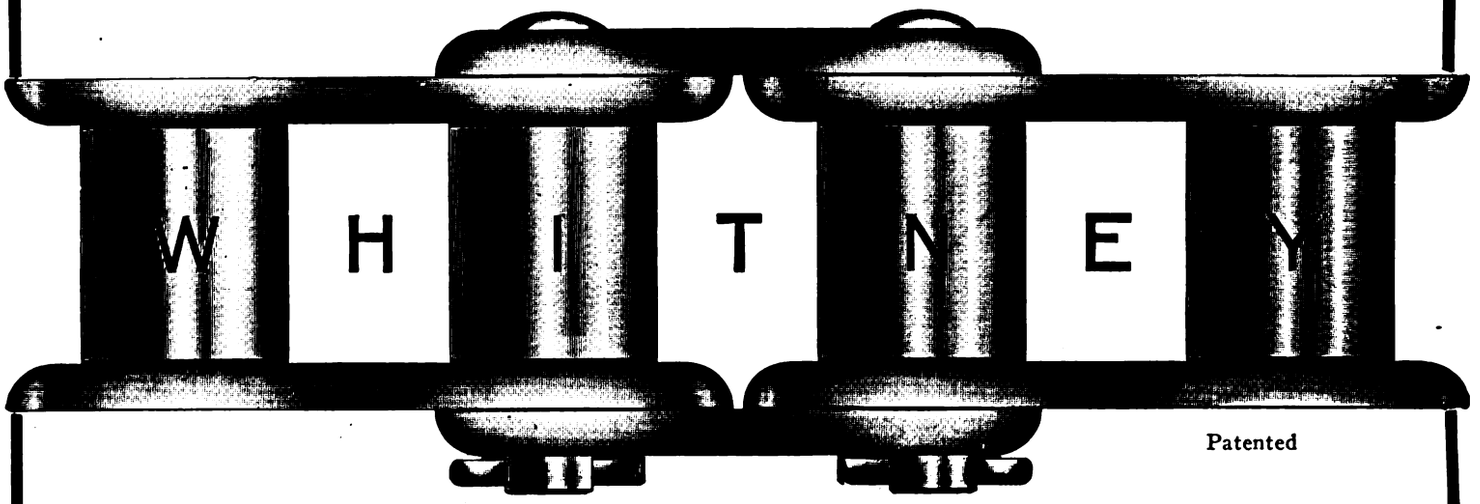
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One ride will make you an enthusiast. Try the Winton Six-Teen-Six on hill or parkway, at a crawl or a dashing spin—observe that speed changes are made on throttle without shift of gears—note how this car starts (on compressed air) without cranking—how it throttles down without jerk or jar—how handily it picks up and gets away—how it goes the route **like coasting down hill.**

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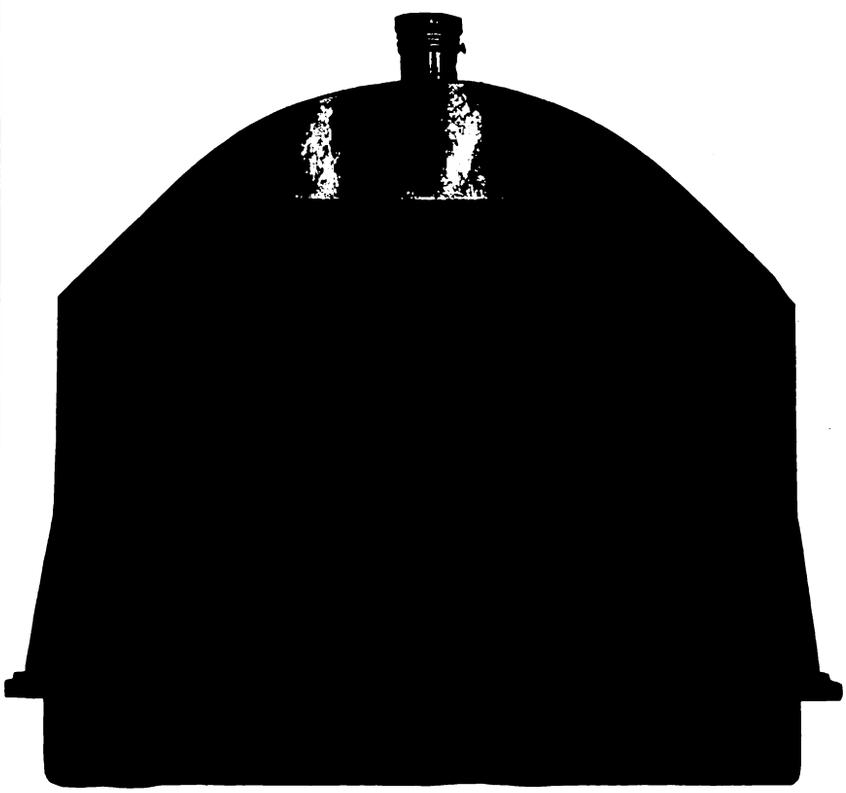
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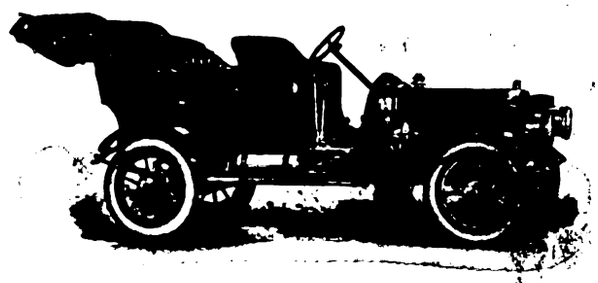
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The Standard of American Automobile Value

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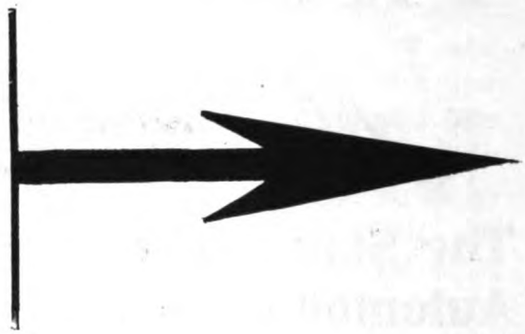
$2000 **The Right Price for the Right Car**

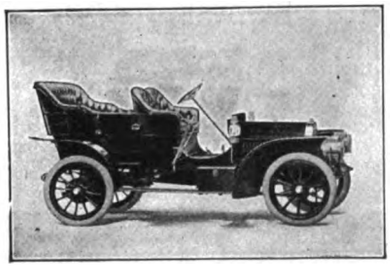
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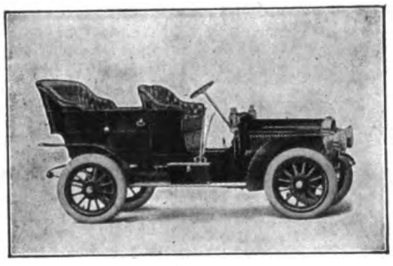
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MR. MOTORIST:
There's some interesting news on the other page. Digest it.

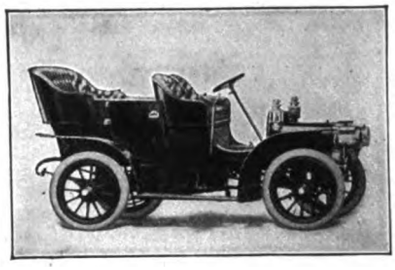




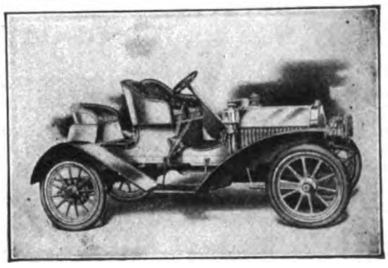
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25 H. P. Four Cylinder.



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Model T. $1,000
10 H. P. Single Cylinder.

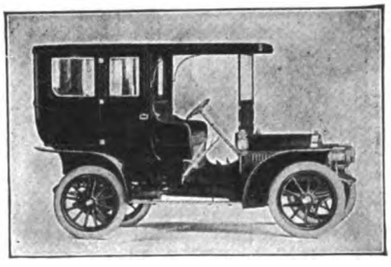


Model G Runabout.....$2,000
25 H. P. Four Cylinder.

Cadillac



Model S Runabout.
10 H. P. Single Cylinder.



Model G Limousine.....$3,000
Model Limousine.....$3,600



Model T Coupe.....$1,350
10 H. P. Single Cylinder.



Model M Delivery.
10 H. P. Single Cylinder.

CADILLAC MOTOR CAR CO., Member Association Licensed Automobile Manufacturers **DETROIT, MICH.**

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Mr. Motorist:

You may think this egotism—but it's not.

Morgan & Wright Tires are making a big hit with the motorist because they continue to make good.

Here is what one motorist has to say about good tires.

POLAND SPRINGS, MAINE, Oct. 11/07

MORGAN & WRIGHT, DETROIT.

GENTLEMEN:—

Six weeks ago today we left Detroit with our 1908 Packard equipped with your tires; we have crossed the Green Mountains once and the White Mountains twice and have been thoroughly over Maine, New Hampshire and Vermont roads, we have had two punctures on the entire trip, we register today 3284 miles and our tires today look as good as the day we left home.

If your tires last like this what is to become of your repair department? And what's the use of carrying extra casings on our machine?

Very truly,
F. E. WADSWORTH.

Branches and Agencies

New York:
214 W. 47th St.,
17 Warren St.

Chicago:
81 Michigan Ave.

Boston:
Motor Mart.

Syracuse:
214 Clinton St.

Buffalo:
379-383 Washington St.

Rochester:
55 Main St. E.

Pittsburg:
913-915 Liberty Ave.

Philadelphia:
13th & Cherry Sts.

Cleveland:
1829 Euclid Ave.

Dayton:
405-411 East Third St.

Minneapolis:
708 Hennepin Ave.

Atlanta:
90 No. Pryor St.

St. Louis:
538 N. Vandeventer Ave.

Kansas City:
605-607 E. 15th St.

Denver:
1562 Broadway.

Los Angeles:
118-122 E. Tenth St.

San Francisco:
423-433 Golden Gate Ave.

Portland:
86 Sixth St.

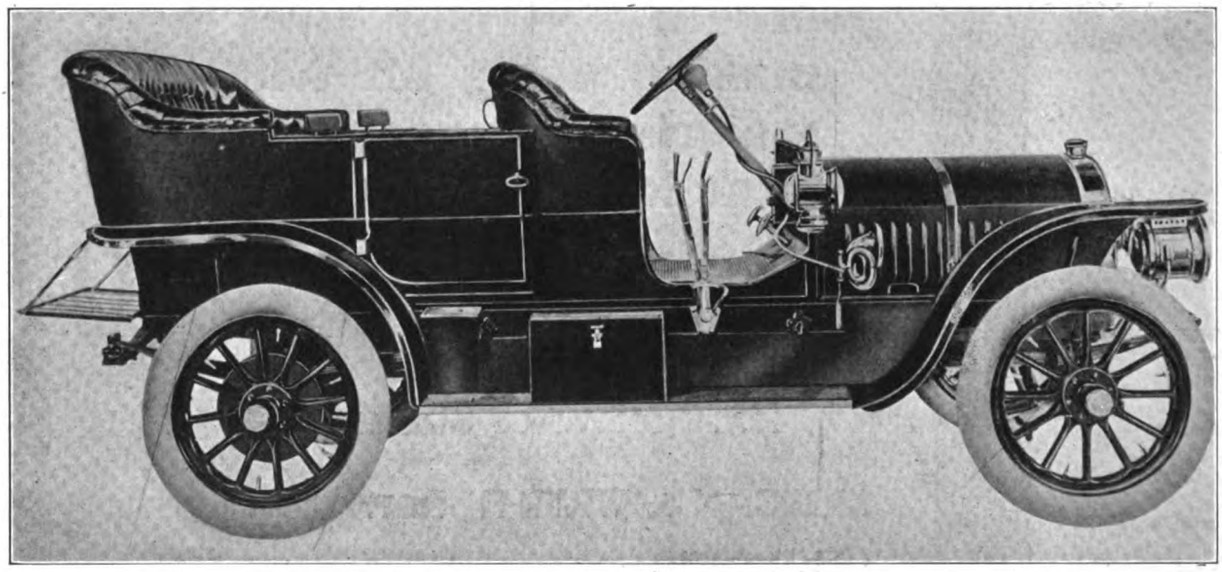
Seattle:
Ninth Ave & Pike St.

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National

MOTOR CARS

"THE ALL BALL-BEARING CARS"



The 1908 Line consists of

Two 4-Cylinder and Two 6-Cylinder Models

in Touring Cars, Limousines and Roadsters. Each equipped with **National Ball-Bearing Motors**

The entire line embodies the tried and proven NATIONAL type of construction, refined and perfected in all details to the highest possible degree.

National Model K, 4-cylinder, 4⅞x5, $3,500.00
National Model N, 4-cylinder, 5x5, $3,700.00
National Model R, 6-cylinder, 4½x4¾, $4,200.00
National Model T, 6-cylinder, 5x5, $5,000.00

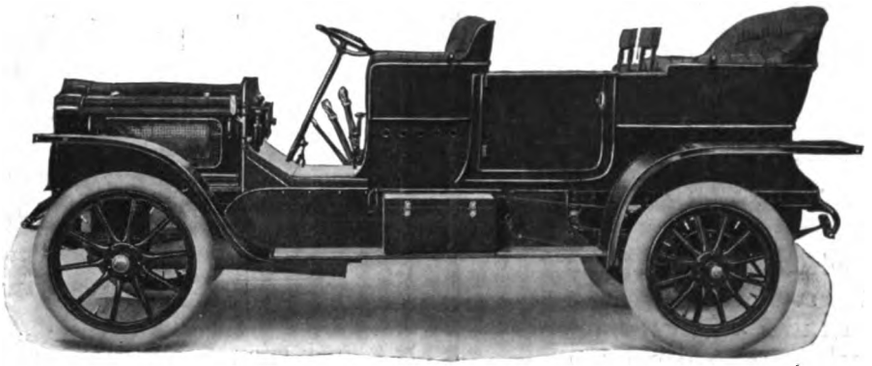
Each machine carries 7 passengers comfortably.

National Motor Vehicle Company, Indianapolis, Ind.

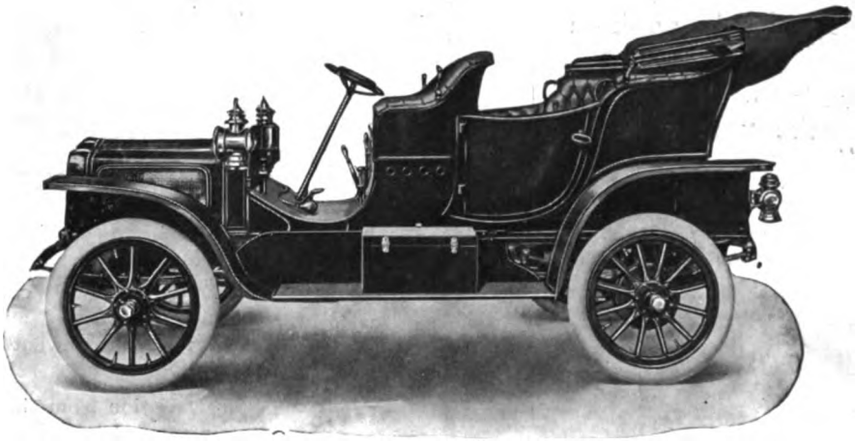
Member American Motor Car Mfrs. Ass'n, N. Y.

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THE INCOMPARABLE
WHITE
THE CAR FOR SERVICE



MODEL "K" 30 HORSE-POWER WHITE STEAM TOURING CAR
Price $3700, f. o. b., Cleveland



MODEL "L" 20 HORSE-POWER WHITE STEAM TOURING CAR
Price $2500, f. o. b., Cleveland

Write for catalog describing the above models and our runabouts, limousines and landaulets

THE WHITE COMPANY
CLEVELAND, OHIO

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"American Mors"

THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

GUARANTEED FOR ONE YEAR

Send for our Catalog. Address Dept. H

The St. Louis Car Company

Automobile Department, St. Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

Studebaker

An Orthodox Car

Every car of the same model and style absolutely like every other car of the same model and style.

Not "occasional good ones," but uniform excellence.

Two 30's and a 40 H. P.; various types of body.

STUDEBAKER AUTOMOBILE CO.

South Bend, Indiana

General Office, CLEVELAND, OHIO

Branches:

NEW YORK CHICAGO KANSAS CITY SAN FRANCISCO DALLAS PORTLAND DENVER

Licensed Under the Selden Patent.

Garford

THE GARFORD conforms exactly with the widest and most experienced opinion as to what constitutes correct design.

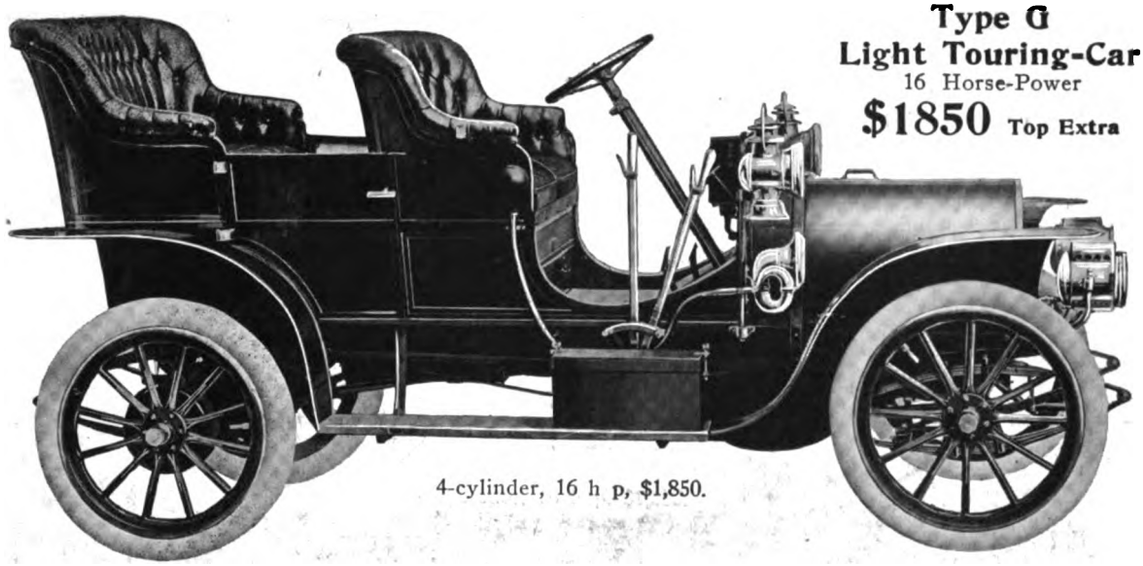
Any variation from Garford principles, even in small details, is a departure from standard and follows the minority judgment.

The combined judgment of all automobile builders and experts would produce a Garford as the composite of the best practice of the day.

Address
Eastern Inquiries
Garford Motor Car Co. of New York.
1540 Broadway, New York City.

Western Inquiries
Garford Motor Car Co. of Cleveland,
1372 East 12th St., Cleveland, O.

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Type G
Light Touring-Car
16 Horse-Power
$1850 Top Extra

4-cylinder, 16 h p, $1,850.

High power with light-weight makes an automobile "do things."

Of course—nobody doubts that. And yet automobile manufacturers keep on handicapping their machines with the weight and inefficiency of a water-cooled engine.

The Franklin cuts out all the weight of water-apparatus and the extra material necessary to carry that weight. By close study of design, materials, and construction, every part of the Franklin is made light-weight but strong.

The Franklin engine is smaller because it works at the temperature of the highest efficiency, 350° or more. A water-cooled motor can't keep up to this temperature, the water would boil away. This is why the Franklin went 95 miles on two gallons of gasoline in the great Efficiency Contest, while the nearest water-cooled machine stopped at 48 miles.

Type G, the light family touring-car, is a striking example of high power with light-weight and perfect strength. It does more and lasts longer than any machine at or near its price. It is the easiest on tires, fuel, and repairs, and gives the most service, dollar for dollar.

You'd better look into this matter of light-weight and the Franklin.

The 1908 Franklin catalogue goes very fully into the subject.

1908 Franklin Models

16 h. p. Touring-Car,	**$1850**	**28 h. p. Touring-Car or Runabout,**	**$2850**
16 h. p. Runabout,	**$1750**	**42 h. p. Touring-Car or Runabout,**	**$4000**

Landaulets and Limousines
Prices f o b Syracuse

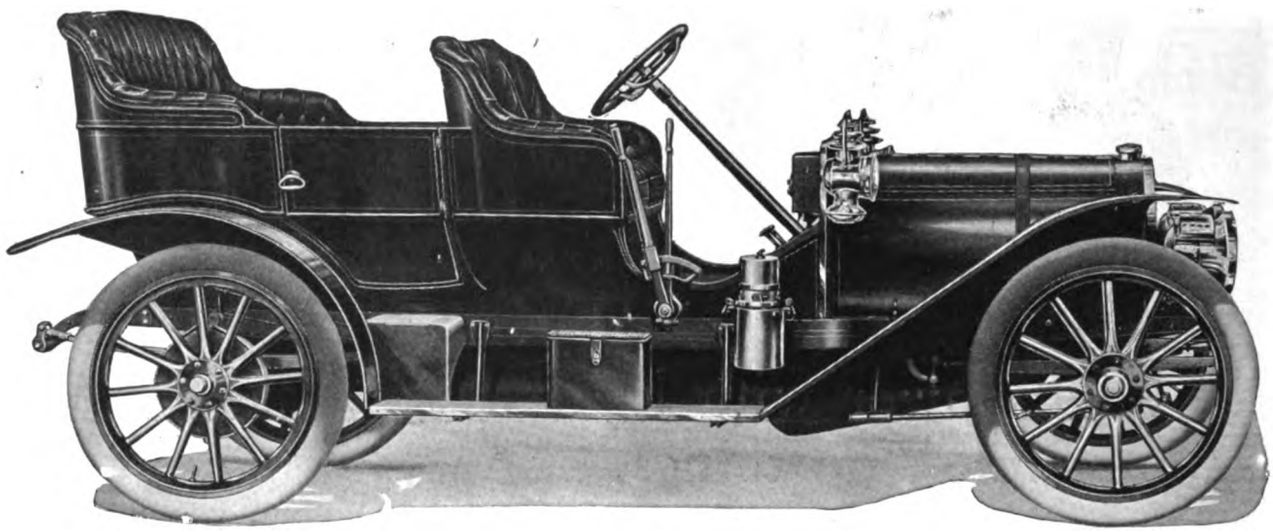
H. H. FRANKLIN MFG. COMPANY, Syracuse, N. Y.
Member Association Licensed Automobile Manufacturers.

FRANKLIN

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Rambler

Model 34
$2,250



In this car is embodied every modern feature that has withstood the severe test of practical service, and each has been refined and developed to the highest degree of mechanical perfection.

Through the offset crank shaft, straight line drive, direct from transmission gear to rear axle without an intervening joint, and ball or roller bearings at every point in the transmitting system, every ounce of cylinder pressure is delivered to the road wheels with the lowest possible loss in efficiency.

Equal improvements have been made in accessibility, comfort and outward appearance, and we offer this car as the equal, from every practical standpoint, of any car on the market, regardless of price.

We invite your most thorough examination, positive that it will convince you of the superiority of the Rambler.

Our advance catalog, describing in detail this car, both as touring car and roadster, and the new utility car, Model 31, is at your disposal. Write for it now.

Thomas B. Jefferv & Company

Main Office and Factory: KENOSHA, WISCONSIN

Branches and Distributing Agencies

CHICAGO MILWAUKEE BOSTON PHILADELPHIA SAN FRANCISCO

Representatives in All Leading Cities

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, November 14, 1907. N. 7

RECEIVER APPOINTED FOR ROYAL

Solvent, but Financial Stringency Forces Friendly Action Against Big Company —President's Statement.

On Tuesday, 12th inst., the Superior Savings & Trust So. was appointed receiver for the Royal Motor Car Co., Cleveland, in United States Circuit Court. The proceedings were instituted by E. W. Cottrell, of Detroit, and Witt K. Cochrane, of Chicago, a stockholder and a creditor. The action, which is in the nature of a friendly suit, is brought to tide the company over embarrassment due to money stringency.

The company, it is stated, has plenty of orders ahead and under the protection furnished by the receivership expects to be able soon to continue business as before.

Immediately following the appointment of the receiver, E. D. Shurmer, president of the company, issued the following statement:

"The Royal Motor Car Co. is abundantly solvent. No one interested in its affairs need feel seriously concerned about the appointment of a receiver. A financial statement recently prepared by the Audit Co. of Cleveland shows that on September 1 the Royal Motor Co. possessed assets amounting to more than $650,000 in excess of all liabilities.

"The company is in fact suffering from nothing more serious than a rapidly growing and profitable business coupled with a stringent money market. The contracts on hand for cars to be delivered during the fall, winter and early spring has necessitated the employment of considerable borrowed money and present monetary conditions have made it impossible for the company to immediately meet its maturing obligations. There is no reason why the receivership should be other than temporary and in the meanwhile the business of the company will be carried on without interruption."

On Tuesday, F. A. Scott, secretary of the Superior Savings & Trust Co., said:

"The trust company was only notified this afternoon of its appointment by the court and has had no opportunity as yet to examine the Royal company's affairs. We are advised by those interested that the company's embarrassment was caused entirely by the rapid growth in its business and failure to obtain additional funds during the present financial stringency."

Minich to Direct Franklin Sales.

V. E. Minich, formerly general manager for the Haynes company, and more recently advertising manager for the National Cash Register Co., has been appointed director of the selling division of the H. H. Franklin Mfg. Co., Syracure. Minich will have charge of the Franklin branches and also general supervision of the sales department, the supplies and sundries business, and the advertising. F. R. Bump will continue as sales manager, and J. G. Barker will continue as head of the sundries department.

Charles M. Steele has been appointed advertising manager. Steele is a former Chicago newspaper man. Until recently has been head of the publicity department of the National Cash Register Co.

Morse Becomes a Thomas Manager.

The E. R. Thomas Motor Co. has created a new office, that of commercial manager, which has been filled by the appointment of E. C. Morse. He will be in full charge of all matters pertaining to the sale of the Thomas product and of the advertising. Mr. Morse was for eight years prominently identified with the sales department of the National Cash Register Co.

Sweet Adds Automobile Tires.

The Sweet Tire & Rubber Co., Batavia, N. Y., which hitherto has devoted itself to the production of solid tires, will enlarge its sphere by engaging in the manufacture of automobile and bicycle tires also. The necessary machinery for the purpose now is being installed.

MOON'S CHANGE AND THE CAUSE

Adopts New Name and Replaces a Foreign Car—New York House to Handle Eastern Territory.

As the result of negotiations that have been in progress ever since the Hol-Tan Co., of New York, relinquished the American agency for the Fiat car, a change has come over the Moon. Henceforth it will be known as the Hol-Tan and the Hol-Tan Co. will act as chief sales agents and will handle all territory east of Pittsburg and Buffalo, including those two cities.

The car will continue to be made by the Moon Motor Car Co., of St. Louis, who will appoint agents and generally care for the business in that part of the country not covered by the New York house.

Harry Fosdick, sales manager of the Hol-Tan Co., will direct the selling campaign. He is possessed of some original ideas in respect thereto which he promises will prove more than interesting to agents—and others. Until he "mixed" with the Italian car, Fosdick always had handled an American car and is "at home" again.

Kansas City Company in Trouble.

Involuntary bankruptcy proceedings were instituted on the 9th inst. against the Kansas City Motor Car Co., Kansas City, Mo., at the instance of F. E. Wear, president of the company, and other creditors. Mr. Wear, the principal creditor, said the company is solvent, but the temporary financial stringency had made it impossible to finance the current business of the company. Its plant is near Sheffield, Mo. Its officers state that the available assets amount to $400,000, while no statement of the liabilities is obtainable, although other sources place the liabilities at $300,000, and the assets at half that sum. Although the company started in a small way and cut no figure outside its immediate vicinity, it expanded greatly during the past year.

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In the Retail World.

Greensburg, Ind., now has a fully equipped tire vulcanizing and repair plant. W. P. Skeen opened for business last week.

The Fort Wayne Motor Car Co., Ft. Wayne, Ind., has moved from West Berry street. The garage now is located on Columbia street.

Leakage of an oil stove caused a slight fire in the National Motor Car Co. garage at Oakland, Cal., November 3. The loss is estimated at about $1,000.

The American Auto Co., has absorbed the Henderson Auto Co., both of Cedar Rapids, Iowa. Cadillac, Franklin and Buick cars will be handled as formerly.

J. E. Odell, Ackley, Iowa, has sold his garage to F. M. Michaels. Following the sale he purchased the business of L. Rice at Cedar Falls, which he will continue.

Archer, Combs & Winters Co., Inc., is the style of a new jobbing house which has commenced business at 306 Oak street, Portland, Ore. Its capital stock is $20,000, fully paid in.

The Buck Automobile Co., has moved from Davenport to Des Moines, Iowa. It is located at 612-614 Mulberry street, where Royal Tourist, Oldsmobile and Peerless cars will be carried.

O. G. Roberts will build a cement block garage on Gay street, between Seventeenth street and Miami avenue, Columbus, Ohio. The dimensions of the building will be 75 x145 feet, and will cost $6,000.

A four story terra cotta brick garage will be erected on the east side of Michigan boulevard, north of Fourteenth street, Chicago, by Mrs. Julia F. Heyworth. The building will be leased to the Winton Automobile Co.

Plans have been made for Lechter's Garage to be erected at North First street and St. James place, San Jose, Cal. The specifications call for a two story building, with a front of half timbered English style. The structure will measure 69x132 feet.

No cause is assigned for the fire which partially destroyed ten cars and damaged twenty others in the garage of the Reo Motor Car Co., Cleveland, 3d inst. The building was not badly damaged but the injury to the cars will result in a loss of several thousand dollars.

Fire which started in the four-story "flat-iron" building in Portland, Me., Tuesday, 12th inst., spread to the adjoining establishment of the James Bailey Co., dealers in automobile supplies. The losses are not itemized, but the total damage is estimated at $100,000.

The Clifton Livery & Garage Co., Cincinnati, last week elected officers as follows: President and general manager, M. E. Braum; vice-president, William Windisch; secretary-treasurer, George Behlan; directors, Dr. L. S. Colter, Dr. J. A. Haerr, F. H. Kirchner, M. F. Galvin and F. S. Krug.

Contracts have been let for the erection of a large garage on Eighth street, for the Solliday Motor Car Co. It will be two stories high, 75x125 feet, providing 20,000 square feet of floor space.

Business Difficulties.

Howard E. Whitney, a dealer in Cambridge, Mass., this week filed a petition in bankruptcy. His liabilities are $11,563, and assets $7,926.

F. F. Dudley, a Winthrop (Mass.) dealer, has filed an involuntary petition in bankruptcy. His liabilities are $6,487, of which $4,658 is secured, while his assets amount to but $402.

Louis C. Howard, who dealt in automobiles at 216 West Fiftieth street, New York, has been petitioned into bankruptcy by three creditors, whose claims aggregate $649. Several judgments which previously had been issued against him, had been returned unsatisfied.

On petition of the R. C. McClure Co., R. B. Sweet and Jesse C. Low, James C. Setrigut has been appointed temporary receiver for the Elbridge Motor & Tool Co., of Elbridge, N. Y. The liabilities are estimated at $5,000. The company has a plant at Elbridge where it has made motors for automobiles and motor boats. Moving the plant to Syracuse after reorganization, is being talked of.

A petition in bankruptcy has been filed against the Da-An-Nite Auto Supply Co. of 1912 Broadway, New York, by three tire companies, whose claims aggregate nearly $8,000. It is alleged that the company on Nov. 4 admitted in writing that it is insolvent and willing to be adjudicated bankrupt. The company was incorporated Dec. 3, 1906, with a capital stock of $20,000, with Francis J. Wallace president.

The Kalb & Berger Mfg. Co., manufacturer of automobile bodies, at 532 East Seventy-second street, New York, has been attached on a claim for $2,000 in favor of Mary Ritter on a note. The company was incorporated in January, 1907, under the laws of the District of Columbia, with a capital stock of $250,000. The sheriff levied on the machinery and tools in the factory, and also upon an automobile. Mrs. Ritter loaned the $2,000 to the company, she said, on August 3, on representations that it was doing a large and profitable business; she now alleges that the business is not much more than a repair shop. She is a widow, and drew the money out of a savings bank to make the loan.

Carrie to Assist Manager Jewell.

Frank G. Carrie has been appointed assistant manager of the recently created Franklin branch in New York City. Carrie was formerly New York branch manager for the Haynes company. With the Franklin people he will be associated with W. S. Jewell, who recently took charge of the New York depot.

The Week's Incorporations.

Brooklyn, N. Y.—Allen-Swan Co., The, under New York laws, with $27,000 capital; to deal in automobiles, etc. Corporators—K. Swan, H. Swan and L. H. Allen, Brooklyn.

Memphis, Tenn.—Cullen-Butler Auto Co., under Tennessee laws, with $5,000 capital; to deal in automobiles. Corporators—E. H. Ward, H. A. Simms, E. R. Odle, F. L. Butler and H. H. Cullen.

Oakland, Cal.—Roslyn Motor Car Co., under California laws, with $50,000 capital. Corporators—Charles R. Ellenwood, Theodore Olmstead, J. M. Limbaugh, Ira H. Keene and F. B. Ellenwood.

New York City, N. Y.—C. G. V. Import Co., under New York laws, with $120,000 capital; to manufacture and sell automobiles. Corporators—Emil Voight, J. P. Murray and C. A. Conlon, New York City.

Newark, N. J.—Howe Motor Car Co., under New Jersey laws, with $125,000 capital; to deal in automobiles. Corporators—Albert E. Howe, Michael F. O'Neil, John Howe and Thomas J. O'Neil, Newark.

Reading, Pa.—A. H. Yocom Co., under Pennsylvania laws, with $50,000 capital; to manufacture motors for automobiles. Corporators—Arthur H. Yocum, George Y. Yocom, and Isaac Hollenbach, Reading.

New York City, N. Y.—Eastern Auto Service Co., under New York laws, with $100,000 capital; to manufacture automobiles, etc. Corporators—F. D. Hollister, J. Seitz, Brooklyn; M. Kram, New York City.

New York City, N. Y.—D. P. Harris Hardware Co., under New York laws, with $200,000 capital; to manufacture and deal in motors, engines, hardware, etc. Corporators—D. P. Harris, S. Maskowitz and H. Goldman, New York City.

Brooklyn, N. Y.—Carlson Motor & Truck Co., under New York laws, with $75,000 capital; to manufacture automobiles, motors, trucks, etc. Corporators—C. A. Carlson, Brooklyn; C. S. Calvert, Newark, N. J.; E. H. Slickels, Edgewater, N. J.

Flint, Mich.—Michigan Motor Castings Co., The, under Michigan laws, with $50,000 capital; to moke motor castings. Corporators—J. W. Thompson, Detroit, president; Frank Bromley, Detroit, vice-president and treasurer; A. H. Goss, Flint, secretary.

New York City, N. Y.—International Automobile School and Engineering Co., under New York laws, with $50,000 capital. Corporators—John T. Baldwin and May Baldwin, 239 East Fifty-third street; Lawrence Gregory, 629 West 135th street, New York City, directors.

Smith Woodworking Plant Enlarging.

The Smith Automobile Co., Topeka, Kan., is making another addition to its plant in which all the wood working will be done. The company already has the distinction of producing everything that enters into the make-up of its cars, save the tires.

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HAVE HAD ENOUGH OF EARLY SHOWS

Well Defined Opinion Growing Out of the New York Exhibitions — How They "Panned Out."

It is fairly safe to say that the trade has had more than enough of so-called "early shows."

If, when the show in Madison Square Garden, New York, closed on Saturday night last there was any one who was anxious to again assist in "forcing the season," by holding an exhibition in October or November, his voice was not very strong or very numerous.

It was not that the show was not a successful one. The attendance was gratifyingly large. There was a full house each evening and on the two "dollar days" and the closing night the crowd was not much reduced. It is understood that the total gate receipts for the week were not fifteen per cent. less than the record of the show in the Garden in January last. But while there may be a few exceptions to the rule, the sales did not hold true in the same ratio. Business was done and, in some cases, good business, but generally speaking, any caution in placing orders not born of the disturbed financial situation was due to a not unnatural disinclination to make purchases so far ahead of the season of actual service.

As the Motor World of last week stated, however, the Garden show served a useful and stimulating purpose in restoring the spirits which had drooped as a result of the disappointing harvest of the show in Grand Central Palace the previous week. But for all of that, there is small doubt that unless a sweeping reversal of views and opinions occur, the last has been seen of automobile shows in either October or November. While the executive committee of the Association of Licensed Automobile Manufacturers has not met since the exhibition closed, a sufficient number of influential members of the organization have made known their views and they seem to point unerringly to a return to January dates.

It also is probable that whenever the next show may occur, some safeguard will be thrown around the sale of the so-called "trade tickets." These are sold in lots to exhibitors at 50 cents each, and it appears that there were those who were not above turning a few dollars into their pockets by disposing of them to speculators. As on two nights of the week, the admission fee was raised to $1, it left the speculators room to cut prices and yet earn a profit. It is understood that detectives who were engaged to ferret out the guilty exhibitors succeeded in doing so in at least two instances.

Of the future of the Grand Central Palace show nothing is yet known. Coming at the very crisis of the financial upheaval when people were more concerned about the safety of their bank accounts than about automobiles, it felt the effects in undue measure and few exhibitors had cause for congratulation. The accessory exhibitors especially were disgruntled, but Time is a wonderful healer and a twelve-month may alter their feelings and opinions.

It is freely stated that the Automobile Club of America, which conducted the Palace show, has had enough and will bow itself out. But when pressed for a specific statement, A. C. A. officials are inclined to be evasive and to take refuge in the fact that the directors have not held a meeting since the show closed.

"We may or we may not have to do with another show," is the nearest to an expression of opinion that can be drawn from Secretary Butler. He did say, however, that the Palace exhibition had earned a profit and that a rebate would be paid the space holders.

Merger Off; Dividends Restored.

The news that a dividend of 1 per cent was paid on October 31 on the common stock of the Rubber Goods Manufacturing Co., which includes the Hartford Rubber Works, G & J Tire Co., and Morgan & Wright, and that this disbursement would probably be made quarterly hereafter, came as a complete surprise to financial circles this week. Last summer the United States Rubber Co., which owns all but $200,000 of the Rubber Goods $16,941,700 common stock and all but $3,000,000 of its $10,351,400 preferred stock, announced that the two companies would be merged for economy of management as soon as possible, probably by an actual liquidation of the Rubber Goods Company. At the same time it was announced that the dividends on the Rubber Goods common stock would be discontinued.

An official of the United States Rubber Co. admitted that the putting of the Rubber Goods company on a regular 4 per cent. basis signified that the consolidation of the two had been given up, for the present at least. The reason for it was not stated. From July, 1901, to October, 1906, when 1 per cent. was declared, there was no disbursement on the common stock.

Deere-Clarke Property is Sold.

Interests represented by C. H. Pope have purchased the property of the Deere-Clark Motor Car Co., Moline, Ill., for $37,500, or 40 per cent. of the aggregate of claims held against it. The purchasers represented all but about $10,000 of the total of $93,000 of claims. They secured this $83,000 of claims by purchase on the basis of 40 cents on the dollar. The factory was purchased on the same basis, with the result that creditors whether previously selling to Mr. Pope or taking the dividend to be declared from the sale of the property will realize approximately the same percentage on their claims.

SMALL CARS FEATURED AT PARIS

Vehicles of Moderate Power Conspicuous at French Show—Decorations Elaborate; Prices Reduced.

In two ways the tenth Paris Salon, which opened Tuesday, 12th inst., nearly a month earlier than usual, is said to eclipse all former exhibitions of its class. According to cabled reports the gorgeousness and elaboration of its decorations have never before beein in any way equalled, and the tendency toward the production of cars of medium and low power, as well as a marked reduction in the cost of some of the better known and more powerful high priced machines, also is unprecedented in the history of French shows.

As was the case a year ago, the space available in the Grand Palais and vicinity proved inadequate, and a temporary structure has been built in the Esplanade des Invalides, across the Seine. As also was the case last year, this section of the exhibition is devoted to commercial applications of the motor vehicle, motors, machinery of construction, and parts, while the main portion of the show is occupied by the numerous exhibitors of pleasure vehicles, the accessory people being relegated to the cramped quarters of the galleries and adjacent halls.

The decorations involve a lavish use of electric lamps for the ceiling and walls, while the individual exhibitions have been permitted to follow their own inclinations in staging their displays. The usual result has followed, many garish and wonderful as well as beautiful effects being secured. The most prominent display in this respect is that of the De Dion company, which takes the form of a Chinese Pagoda, commemorative of the Pekin-Paris race of last summer. In the same connection, the grouping together on one stand of all the cars which have won notable contests during the year, also attracts considerable attention.

Nearly all the French makers are now going in for light models of 16-20 horsepower, and costing from $1,000 to $2,000. Many of these cars are now shown for the first time. Several of the European makers outside of France also are showing similar constructions, notably those of Italy. This, coupled with the lowering in price of the higher powered cars, already mentioned, the cut being variously stated as averaging from 15 to 40 per cent., reveals a tendency on the part of the Continental branch of the industry which is considered as being very significant. Structurally, little novelty is to be found. There are few freak designs on view, and everything points to an increased trend toward absolute standardization of design, regardless of type or horseporew.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, NOVEMBER 14, 1907

Trade Papers.

"We take this occasion of renewing our sense of obligation to the different trade papers that appeal to the carriage builders for their constituency. We are probably so used to this item of necessity in our business as to take its existence as a matter of course. If we were deprived of them for any period, however small, we probably would be brought to a realizing sense of their value and how much we depend upon them."—From the committee report rendered at the Carriage Builders' National Association's annual convention.

Brakes and Braking Mechanism.

Brakes and braking mechanism have received an unwonted, though justly deserved amount of discussion during the last few months, and the reward of past experience, coupled with this agitation, is seen at once in the improved devices applied to a majority of the new cars. But however near to the ideal the braking arrangements of a car may be, they are liable to failure, or to inefficient response unless the driver learns when and how to use them, and wherein their limitations lie. It is possible to stop the average car in an almost incredibly short distance, even when running at a high rate of speed. Knowing this, the average driver pays little or no attention to the effect of such a stop upon the machine, unless the effect on the tires, which is plainly evident, be excepted. Yet the intelligent and consistent use of the brakes is as much and perhaps more, an art, than the intelligent and consistant use of the clutch and gears, and braking should be given full as much attention by the learner as any other of the several divisions into which it is possible to segregate the art of car manipulation.

Few drivers would think of jumping a car into high gear and getting the engine up to its normal rate of speed inside of a distance equivalent to a couple of city blocks, under ordinary circumstances. Yet in case of emergency, the brakes are called upon to bring the machine to a full stop in a distance equivalent to perhaps less than half the length of a single block. The amount of work involved in accelerating a car to any given speed, may be considered as roughly equivalent to the amount of work involved in bringing it to rest in the same distance from that speed. Hence stopping a car in a shorter distance than is commonly required for getting up speed, must inevitably throw upon it strains which are largely abnormal.

A foreign scientist recently has been examining into the theoretical relation between the stresses due to positive and negative acceleration, and announces that for a 3,000 pound car, running at 30 miles an hour, and stopped in 20 yards, a braking effort equivalent to 67.3 horsepower is required. At 40 miles an hour, 63.6 horsepower would be required to stop the same car in 50 yards, while a 3,500 pound car, running at 60 miles an hour would demand the expenditure of 126 horsepower if it were to be stopped in 100 yards. One hundred and seventy-two horsepower would stop the second car in 5 seconds, and 252 horsepower in 50 yards, or 630 horsepower, if the full stop were to be attained in 20 yards. These figures represent the amount of work required to overcome the kinetic energy of cars of these weights, moving at the speeds stated. No matter how the brakes are applied, the equivalents of these amounts of work must be expended somewhere about the machine in order to check its motion.

Comparison in this way of car weights and "braking horsepower," if the term may be employed, shows at once the necessity for an excess of retarding over accelerating power, and also implies that where that excess is lacking, sudden stoppages must throw enormous and disastrous strains on the car. To avoid these strains, the brakes should be applied gently and only in such an amount as conditions may require. The best drivers are those who have recourse to the brakes only in case of emergency. The less the brakes are used, the less the mechanism of the car is strained, and though this fact is commonly conceded, absolute realization of its importance comes only by comparison of the respective power costs of starting and stopping.

Why the Double Rumble?

It may be possible that the big runabout with the rumble seat may survive the test of time, but it is difficult to discover what particular niche is filled or is to be filled by the runabout with the "double rumble."

Unless it appeals to harum-scarum youths in or out of college, who are possessed of more money than brains and more of affected "sportiness" than either of the other things, where the market lies for such vehicles will be one of the matters of at least passing interest that the future will decide.

There is some shadow of excuse for the single rumble. It may appeal to the ultra-fashionable who would have their chauffeurs possessed of the appearance, if not the virtues of a liveried footman, or on occasion it may prove of real use, as, for instance, when an owner may wish to drive a guest to a given point and in turn may desire to have his chauffeur do the driving on the return journey, or, if he is possessed of a negro driver, the rumble seat affords a means of preventing such misunderstanding on the part of the rabble as was once disclosed by that famous remark attributed to one of the latter. "Say, look at the nigger with a white driver." Certainly the "double rumble" was never designed for woman's occupancy and with big, comfortable tonneaux available, is not easy to comprehend why any man should desire that any of his male friends or any two male members of his family should after performing mutual contortions from opposite sides of the car, stow themselves each in a squat seat below the level of the heads of the men in

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front, and in position to receive the full benefit of every jolt, and which withal is not too safe. It may be that a few "young bloods" anxious to "cut a dash" may revel in that sort of thing, but if so it hardly seems probable that they exist in profitable numbers.

Viewed from whatever standpoint, it is difficult to see in the "double rumble" any of the elements of permanency. At the same time, it is possible to see how some unthinking persons purchase such bodies as an improvement on the touring car and thus meet with disappointment. In other words, the tonneau so much more comfortably and acceptably fills the same bill that the question cannot but arise, as, indeed, it several times has arisen, Why the double rumble?

The Use of One Chassis.

A most important phase of the development of motor car design at the present time, is revealed to a great extent by the prevalence of the high-powered runabout. Generally speaking, whether known as runabout, tourabout, "sportabout," roadster, or gadfly, this class of vehicle is mounted on a chassis practically identical with that of the touring car produced by the same maker. In certain instances the position of the radiator is altered, the wheel base shortened, and the angle of the steering column changed to suit the altered conditions of load and seating position. In others practically no change is made. Invariably, the same parts, with few exceptions enter into both chassis. The same relation, with about the same number of possible exceptions as to detail, apply to the limousine or closed body and the chassis upon which it stands.

For a long time makers strove to make the body as nearly as possible independent of the chassis, to make the power plant and running gear an independent automobile unit in other words. This having been accomplished to an almost inclusive degree, the advantages of reducing the number of chassis produced to one or two, is appealing strongly to all the makers. In many instances the fact that the chassis employed in several models are practically the same, is to be learned only upon close questioning. In others, no secret is made of the fact, while in at least one instance a maker takes pains to advertise his use of but a single understanding for all three of the car types he produces.

This is broad and valuable economy as a practice, both in the simplification of shop methods, reduction in the number of parts to be produced, and consequent limitation of production expenses, and also in that it tends to segregate chassis and body building into two independent branches. This latter trend, of course, encourages the entrance of the old-line carriage makers into a most important contributory line of the industry and gives them a footing which otherwise they might be long in gaining. Its ultimate effect on the purely commercial side of automobile building is entirely a matter of conjecture at the present time. But apart from that side of the question which relates to the important and rather ticklish matter of specialization in its tendency to subdivide of the work of production, there can be no doubt of the general benefit to be derived from the concentration of manufacturing effort upon one, or at the most, two basic types of mechanism, adapted to as many changes of aspect as may be expedient.

One advantage of the show season, which, though utilized very largely, seldom appears to excite any comment, is the opportunity it presents for the makers of attachments of various sorts to get into touch with the constructions displayed, both for studying their nature, and for gathering data to be used in preparing both special equipments and universal fittings. Thus from opening day to closing night, a crew of draughtsmen and engineers may invariably be seen going from car to car, measuring and recording the dimensions which most vitally concern them, or questioning the designers. It is only by such close and accurate means that the accessory makers are enabled to ship their instruments with any degree of certainty that they will go into place as required. What it saves them in time and labor, to have all, or nearly all the cars gathered under a single roof for a few days, would be impossible to compute. Much that they learn, in fact, could be obtained in no other way except in the course of years of study.

There is no longer any doubt of the advantage of using a direct drive on the gear ratio which is most used in ordinary driving. Cars having speed changing devices in which three options are given on the forward relation are almost universally supplied with such an arrangement, while the practice also is common on four speed gears. It has required several years, however, to convince designers of four-speed gears that it is good economy to place the direct drive, that is to say, the connection on which the lay shaft is idle, if not stationary, on the speed normally used, regardless of whether it happens to be the thord or fourth. In most instances it is the third speed, and accordingly third speed direct drives are the most advantageous, since they permit the most economical transmission of power the greater part of the time. The "double direct" on third and fourth speeds, while desirable, if of questionable advantage when obtained at the expense of a twin bevel drive.

COMING EVENTS

November 9-16, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show at First Regiment Armory.

November 15-16, Newark, N. J.—New Jersey Automobile and Motor Club's 24-hour endurance contest.

November 16, Providence, R. I.—Rhode Island Automobile Club's annual hill climbing contest on Riverpoint hill.

November 26, 27, 28, Chicago, Ill.—Chicago Motor Club's three days' 600-mile reliability run.

November 28, Wilmington, N. C.—Automobile races on Wrightsville beach.

November 28, Riverside, Cal.—Annual hill climbing contest on Box Springs hill.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

December 7-14, San Francisco, Cal.—Automobile Dealers' Association of California's second annual show in the Coliseum.

December 9-14, Detroit, Mich.—Detroit Automobile Dealers' Association's show at Wolff's pavilion.

December 14-21, St. Louis, Mo.—St. Louis Manufacturers' and Dealers' second annual show in Jai Alai building.

January 14-18, Hartford, Conn.—Hartford Automobile Dealer's Association's annual show in Foot Guard Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sportsmen's Association's show in Light Guard Armory.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's show.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association show in Duquesne Garden.

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A. A. A. RE-ELECTS OLD OFFICERS

Annual Meeting of Directors—Financial and Other Reports Presented—"Banqueting Tour" One of the Suggestions.

William H. Hotchkiss, of Buffalo, succeeded himself as president of the American Automobile Association at the annual meeting of the Board of Directors, which took place in New York City, Friday last, 8th inst. All the other incumbent officers also were unanimously re-elected, as follows: First vice-president, Lewis R. Speare, Boston; second vice-president, Asa Paine, Minneapolis; third vice-president, Ira J. Cobe, Chicago; treasurer, George E. Farrington, New York City; secretary, F. H. Elliott, New York City.

Because of the presence of so many out of town directors in New York on account of the shows, the annual meeting of the board was the largest ever held, representatives from Leominster, Springfield and Worcester, Mass.; Providence, R. I.; Hartford, Conn.; Buffalo, Syracuse, New York City, Binghampton, Schenectady and Rochester, N. Y.; Newark, Paterson and Jersey City, N. J.; Philadelphia and Pittsburg, Pa.; Cleveland, O.; Chicago and Washington, being in attendance.

Besides the election of officers and a vote to increase the board from 11 to 17 members, the meeting was taken up by reading the annual reports of the officers, the treasurer's report naturally being the most interesting, as this was the first time that a detailed account of the association's financial affairs has been made public.

On November 1st, when the report was made, there remained a balance in the treasury of $4,851.03. The fiscal year began on February 1st and the balance on hand at that time was $8,487.84. The total receipts from February 1st to November 1st have been, including the balance carried over, $20,862.85, divided as follows: 64 sanctions, $2,045; blue books, $925.05; maps, $200; buttons, $105.25; pins, $97.75; individual memberships, $532.75; associated clubs, $3,426.50; unaffiliated clubs, $562; Vanderbilt race, 1906, $3,587.06; protests, $70; donation account of rent, $425, and several minor items. There is also coming from the touring board the sum of $2,020.19.

The largest item of expenditure is the account of the secretary's office, where $4,973.05 was paid to the secretary and his assistants in salaries; $1,177.32 for stationary and postage, and $2,120.94 for traveling and sundry expenses, making a total of $8,271.31. The expenses of the other offices naturally are small in comparison $297.50 being the total expense of the treasurer's office, the items being a bookkeeper's salary and sundry expenses; $625.98 for the president's office, where the items were $280 for a stenographer and $345.98 for traveling and sundry expenses, and $523.25 for the touring board, the largest item there being for clerical assistance. The next largest item was the money returned to State associations, pro rata of dues, the amount being $2,533.76, which left a balance from that source of only $892.74. A number of sanction fees also were returned for various reasons, and the rent for the association's offices was $1,256.24; the other items are of minor importance.

President Hotchkiss rendered a long report, in which he announced that the permanent edition of the association's year book, to number 20,000 copies, will be mailed to the various club secretaries to be distributed to the individual members free of charge, about the 15th of this month. The present year book is small and much space is devoted to symposiums of the officers, and President Hotchkiss advocates that in future it should be much enlarged and perform the function of the hand-book published yearly by the Royal Automobile Club of England. The growth of the national body makes necessary an enlargement of the executive committee, which now numbers seven, said Mr. Hotchkiss. The present committee numbers seven, and with it have met the chairman of the boards, who have not heretofore been members thereof, making a governing body of ten in all. In the coming year there will be six boards instead of four. Each chairman should, in President Hotchkiss's judgment, be ex-officio a member of the executive committee instead of only the president, first vice-president and treasurer, as is now the case. Under the present by-laws four members at large, not officers, are appointed to such committees, which number he thought should be increased to seven. The change was adopted so that the executive committee will hereafter in effect be one of seventeen members instead of ten as at present.

President Hotchkiss also recommended an active campaign for individual members. The president thinks, however, that there should be a more equitable division of the fees paid in by individual members, for as present conducted, seven-eighths of the revenue inures to the benefit of the clubs and associations, while the national body, which bears the expense of recruiting them receives only one-eighth of the revenue. The report mentioned the fact that a special committee of sanctions had been appointed to make suggestions governing track racing, and that there should be a Vanderbilt cup race next year and also a contest for stock touring cars, the suggestion being advanced that the racing board have an additional officer, to be known as a vice-chairman—preferably an engineer—to whom many of the matters on which the racing board will have to pass, may be referred, and from whom expert advice and services could be secured, the additional expense to be met by an increase in sanction fees.

Secretary F. B. Hower, of the touring board, reported that the receipts from the Glidden tour and the tour for the Hower trophy were $7,401.24, and the expenses $5,381.06, leaving a balance of $2,020.19, which will be reduced to $1,463.85, if the general expenses of the board, amounting to about $566.34, are deducted.

According to Secretary F. H. Elliott, the association now has an aggregate membership of 19,209, consisting of 16 affiliated State associations, comprising 120 clubs with a membership of 17,550; 15 unfederated clubs with a membership of 1,035; 621 individual members and three life members. According to the records of October 1, 1906, there were 5 State associations, comprising 70 clubs, with an approximate membership of 8,857, showing a healthy increase of 10,352 members during the past nine months. The racing board has granted 64 sanctions, for which about $2,000 has been received. The secretary also advocated a campaign for individual members, suggesting that each State association take up the question, and also that a uniform yearly rate of $2.00 be charged, to be divided equally between the State associations and the national body.

A somewhat amusing part of Mr. Elliott's report is a suggestion "that a banqueting tour be arranged so that representatives of the association may be present at the social functions which are held during the winter months by the affiliated clubs."

Berkshire Roads to be Posted.

As the Berkshires afford a popular touring ground for automobilists, it will no doubt be welcome news to learn that the Berkshire Automobile Association, recently formed at Pittsfield, Mass., will make its first work that of posting the highways with guide posts, warning signs and other information. The association elected officers as follows: President, Daniel England; first vice-president, Franklin Weston; second vice-president, Samuel G. Colt; treasurer, R. P. Parker; secretary, S. H. Clapp.

Scranton Forms an Association.

With forty-three charter members the automobilists of Scranton, Pa., have organized the Automobile Association of Scranton, electing the officers as follows: President, Dr. H. B. Ware; vice-president, Geo. Jermyn; secretary and treasurer, Hugh R. Andrews. Nine physicians are included in the present membership. Scranton has about 200 automobilists.

Sacramento Club Elects Officers.

Recently formed, the Sacramento County Automobile Club, of California, has completed organization by the election of the following officers: President, Dr. J. A. McKee; vice-president, R. A. Wood; secretary, Gilbert P. Beere; treasurer, J. G. Patterson; directors, Dr. H. C. Bulson, L. J. Shepard, Dr. C. L. Megowan, E. S. Brown and R. H. Weil.

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SHOW WEEK IN PHILADELPHIA

Seventh Annual Exhibition Opened with Big Attendance—Practically All Leading Makes of Cars are Staged.

Without formality other than the fanfare of many horns and other noise makers, the seventh annual automobile show promoted by the Philadelphia Automobile Association opened auspiciously in the First Regiment Armory, that city, Saturday night last, 9th inst.

Because of the proximity of the Madison Square Garden show, which closed the night the Quaker City exhibit opened, naturally all the exhibits were not in place when the doors were swung open at 8 o'clock, and it was thought this fact would cause the attendance to be smaller than on previous opening nights, but just the opposite developed. The crowd was so great that inspection of the exhibits was out of the question, and this fact made the dealers feel confident of a corresponding increase throughout the week. It was not until Monday that the several vacant spaces were filled by the arrival of exhibits from New York.

The evening attendance since the opening has averaged fair, but of the crowds that have not come during the daylight hours, the less said the better.

Philadelphia's show of course is a local affair, and is the first of the community exhibitions to take place this show season. It is the seventh annual display, and is a record-breaker in every respect for Philadelphia, being greater in scope and number of exhibits, than any previous affair. How the effort to "force the season" by such early dates will "pan out" is another question. Thirty-two automobile exhibitors are in evidence, representing forty-two cars, while the number of accessories exhibitors foots up to twenty-four.

"Autumn" is the theme predominant in the decorations. White and yellow are the prevailing colors hung from the ceiling of the armory. The aisles, covered with brown burlap, are suggestive of just ordinary roads, which will resolve into an intimation of oiled highways when the country visitors shuffle some of the rural mud off their boots. The idea of turf is expressed in the flooring of the exhibit spaces, which are in green. Trees and autumn leaves heighten the illusion. Instead of a motley assortment of signs that has marred some previous shows, but one neat sign giving the name of the car or article manufactured is permitted in each booth, which gives a pretty ensemble, one that will not cause visitors to weary of their surroundings.

Practically all the leading makes of cars are represented, including the Peerless, Franklin, Ford, Rambler, Matheson, Pope-Hartford, Pierce-Arrow, Cadillac, Baker, Stoddard-Dayton, Packard, Maxwell, Locomobile, Stearns, Crawford, Elmore, Royal Tourist, Winton, Marmon, Acme, Mitchell, Apperson, Autocar, Lozier, Reo, Premier, Columbia, American Mors, Cleveland, Walter, American, Overland, Marion, National, Pullman, Jackson, Mercedes, Pope-Waverly, Pennsylvania and Wayne. With few exceptions they are shown by the Philadelphia agents. In accessories, the majority of staple articles are displayed by local sundries dealers. The list of exhibitors follows:

Quaker City Automobile Co.—Peerless and Franklin.
Ford Motor Car Co.—Ford.
The White Company—White.
Thomas B. Jeffery & Co.—Rambler.
Titman, Leeds & Co.—Matheson.
Foss-Hughes Motor Car Co.—Pierce Arrow, Cadillac and Baker electric.
Hamilton Auto Co.—Stoddard-Dayton.
Keystone Motor Car Co.—Packard.
Kelsey Motor Car Co.—Maxwell.
Locomobile Co. of America—Locomobile.
Motor Shop, Inc.—Oldsmobile and Stearns.
T. M. Twining—Crawford.
Gawthrop & Wister—Elmore.
Hills Motor Car Co.—Royal Tourist.
Brazier Automobile Works—Marmon.
Winton Motor Carriage Co.—Winton.
John L. Scull—Acme.
Penn Motor Car Co.—Mitchell.
Philadelphia Automobile Co.—Apperson.
Autocar Company, Ardmore, Pa.—Autocar.
General Motor Car Co.—Lozier.
Reo Motor Car Co.—Premier and Reo.
Prescott Adamson—Columbia.
Girard Motor Car Co.—American Mors and Cleveland.
International Motor Car Co.—Walter, American, Overland and Marion.
Tioga Automobile Co.—National.
L. R. French—Pullman.
Spencer Motor Car Co.—Jackson.
West-Stillman Motor Car Co.—Mercedes, and Pope-Waverly.
Pennsylvania Auto Motor Co., Bryn Mawr, Pa.—Pennsylvania.
Rittenhouse Garage—Wayne.
Carter Motor Car Corporation, Washington, D. C.—Cartercar.

Accessories.

Firestone Tire & Rubber Co.—Firestone tires.
Charles E. Miller—Accessories and sundries of all kinds.
George W. Nock Co., Inc.—Accessories.
Eugene L. Richter Electric Co.—Alternating current rectifier.
Rose Mfg. Co.—Neverout lamps.
Charles F. Kelom & Co.—Lubricants.
Brown Auto Top Co.—Tops.
B. F. Goodrich Co.—Goodrich tires.
James L. Gibney & Bro.—Tires.
Auto Equipment Co.—Accessories.
Manufacturers' Supply Co.—Accessories.
Diamond Rubber Co.—Diamond tires.
Philadelphia Auto Accessories Co.—Automobile tops and accessories.
Columbia Lubricants Co.—Oils and greases.
Puritan Soap Co., Rochester, N. Y.—Automobile soaps and metal polish.
Morgan & Wright—Morgan & Wright tires.
Autolight & Motor Supply Co.—Accessories.
Standard Rubber Tire Co.—Republic tires.
Edmond E. Hans Co., Minneapolis—Dashboard tank gasolene indicator.
Indian Motor Cycle Agency—Indian motorcycles.
Goodyear Rubber Co.—Goodyear tires.
Home Tire Co., Trenton, N. J.—Tires and hard rubber specialties.
M. L. Snyder—Rubber goods and fire equipment.

Adding Space for St. Louis Show.

Because the Jai Alai building, in which it will hold its second annual show, during the week of December 14 to 21, is too small, the St. Louis Automobile Manufacturers' and Dealers' Association, will erect another building adjoining the exhibition hall to provide room for all the exhibitors. The new building will be only temporary and will be built on the east side of the Jai Alai building with an archway in the center connecting the two. It will have the same floor space as the permanent building.

Mutual Benefits for Columbia Men.

Employees of the Electric Vehicle Co., of Hartford, have organized a mutual benefit association. Six dollars a week, not exceeding thirteen weeks in one year, and a death benefit of $50 are to be paid. The company has agreed to back the association on to a certain extent. One hundred and fifty workers in the Columbia factory signed the charter roll and elected officers as follows: President, O. C. Johnson; vice-president, R. Thomas Huntindon; secretary, W. E. McLaren; treasurer, F. D. Fay.

Milwaukee Association Abandons Show.

Members of the Milwaukee Automobile Trade Association have decided that it would be impracticable to hold a show in that city this year. When the question was discussed, a majority of the members were in favor of a show, but when it was brought out that in order to make a Milwaukee exhibit a success it would have to be held before the Chicago show, and as this would be impossible, the association voted to abandon thoughts of a show this year.

"Accessory Lifters" Busy in Chicago.

The "accessory lifters" are making their presence felt in Chicago. Ten fur coats from the Motor Car Supply Co., and nearly $1,000 worth of inner tubes from the G & J branch, are the latest reports to the police. Manager Bliss of the Rambler garage, and John Pierson, an employee, surprised the intruders at that establishment, but the burglars evaded capture and escaped.

Garden City Has a Factory Dream.

Garden City, Kan., is all excitement these days. It has a vision of an automobile factory as T. G. Musselman, of Chicago, is "in its midst," looking for a site to establish an automobile company. Musselman's company proposesh to make three styles of cars, one of them with "one-piece axle," it is stated.

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"DUCKMOBILE" ON THE HUDSON

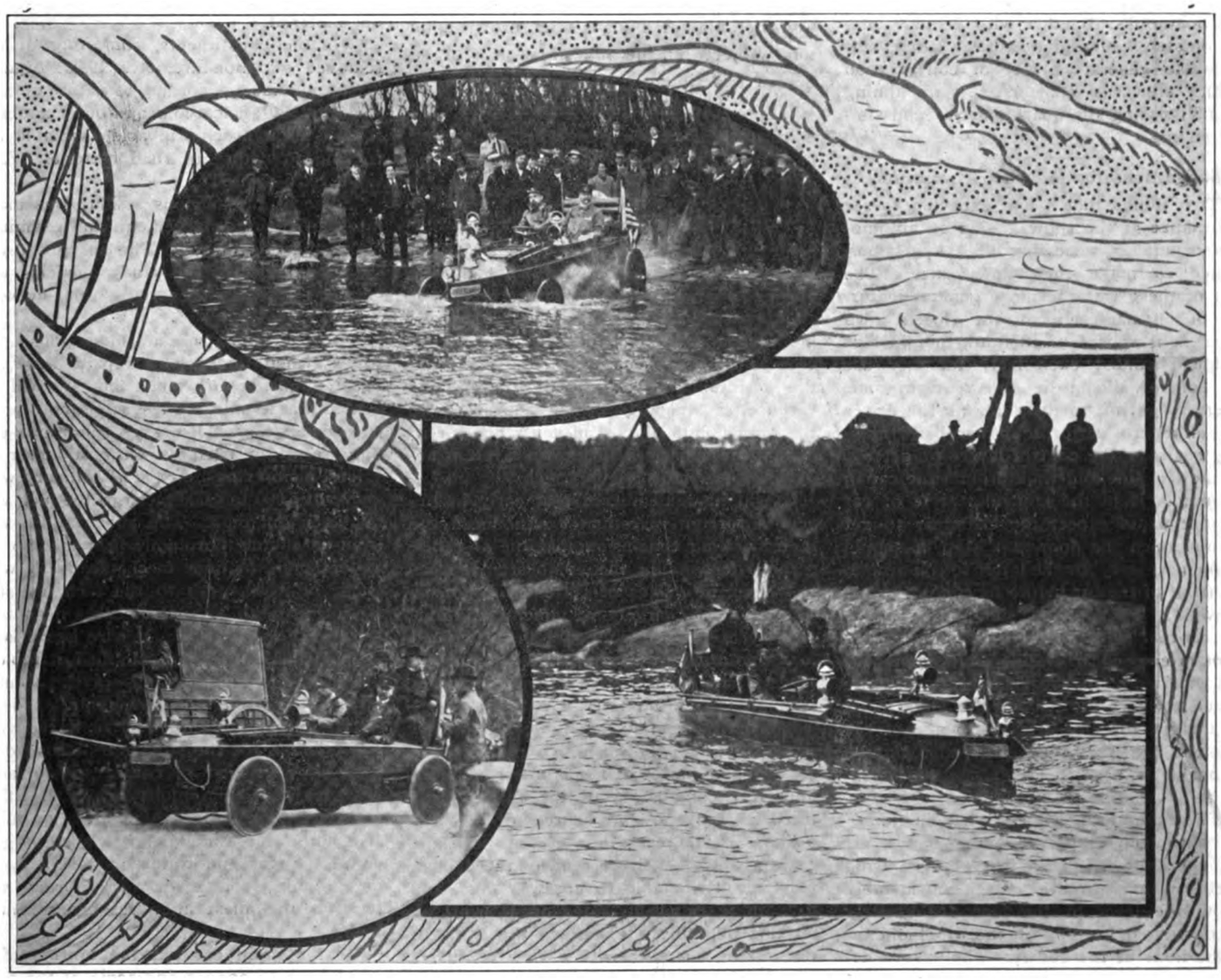
New French Wonder Makes Its American Debut—Bowls Along the Boulevard and Rides on the River.

WaterlandI, the Jules Verneish amphibious automobile invented by Jules Reveiller, of Paris, and brought to this country two weeks ago with a view to establishing an agency here, had its first public demonstration on Tuesday last, 12th inst. Incidentally, it proved that the comic artists, who, for many years have "made game" of just such a craft, builded better than they knew. The queer craft naturally attracted considerable attention, and almost drove a chauffeur to drink when it plunged into the Hudson river at 173d street.

With the inventor himself at the wheel, a mechanicien and General John T. Cutting aft, a start was made early in the afternoon from the Oldsmobile salesroom on Broadway, where the machine had been stored. A number of automobilists and motor boat experts followed the land and water craft as it chugged up Broadway. At Lafayette boulevard the Waterland I. went up as far as 173d street, turning into the extension of Riverside drive leading to the narrow road down to Washington point.

From the drive down to the point the road is so rocky that the advance guard shouted a warning, but the pilot said in French, which was translated and passed on to the expectant newspaper men and others: "Never mind, we will proceed!" The boat-car ploughed its way through the soft sand and the momentum acquired was sufficient to carry it out into the river some distance, when the pushing of a lever set the propeller blades to churning the water almost immediately. M. Reveiller steered the craft straight out into the stream for a hundred yards, then turned it once in its length, backed, halted, cut a figure eight, and came ashore. Mrs. Julian P. Thomas, wife of the uncooked wheat bread expert aeronaut-motorist, who was standing close by, asked for a ride, and after she was seated in the stern the pilot reversed the engine and the machine backed into the water. After cutting several figures, and performing all the stunts that a well-meaning motorboat can do with propriety, it came ashore and was transformed into an automobile again.

The rig, which is of dark blue set off with bright yellow striping, is essentially a broad beam boat, with 34-inch disc wheels for land running. It is 35 feet long and 6 feet wide, and is equipped with a two-cylinder De Dion engine, variously rated at from 12 to 20 horsepower. The disc wheels are hollow to give buoyancy in the water, and are equipped with solid rubber tires for land use. The front wheels are controlled by a regular automobile type steering wheel in the cockpit, and not only govern the direction on land but assist the small rudder at the back when the boat is in the water. The rear wheels are driven by side chains; the jack shaft ends with the driving sprockets extending out of the sides of the hull, the bearings being packed to exclude water.



WATERLAND I. ON THE ROAD AND ON THE RIVER

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The radiator is mounter flat along the forward deck, and the latter also bears a small capstan or windlass which is geared to the engine, so that by tying a rope to a tree on land, the boat when in the water may pull itself up the steep declivities of the shore. By one movement of a lever by the operator's seat, the engine power is changed from the driving wheels to the propeller or vice-versa. Two seats are provided, each holding two persons, the operator occupying the right half of the forward seat. Oars and boathooks, together with a small companion step ladder, give nautical fittings sufficient to generate plenty of conversation about "stewards quarters," "main dining salon," "pacing the quarter deck," and similar jesting.

Suggestions for More Improvements.

"Two things that I had expected to see materialize at the shows," said an automobile expert in reviewing his impressions, "failed to make their appearance. The first of these was the more general featuring of left-hand control for closed town cars. It is ridiculous to think that in cars designed almost exclusively for city use the control should be on the right side, where to get off to the sidewalk the driver has either to perform an acrobatic leapfrog act over the control levers or get out on the left side and walk around the car in the mud. If in the landaulet style of car the occupants expect the chauffeur to get off and open the door at a stop, it should not be necessary for the latter to run around the front of the car before he can get to the sidewalk. The control should be on the left so that he can be at the door an instant after the car stops. Left hand control is already in great vogue on electric vehicles, where the makers are alive to its advantages for city driving. Some of the gasolene light cars for city use also employ it, but it is nevertheless much too infrequent.

"The other thing which I had in mind," he continued, "is curved wind shields. It has been shown abroad that curved wind shields which have their top considerably below the level of the face are entirely satisfactory in keeping off the wind, and yet I saw none at the shows. The curved design serves to create a strong vertical upward draft in front of the driver, through which the direct wind cannot penetrate, so that while the driver has an unobstructed view of everything before him he is protected from bugs and wind by a shield of air. Very ingenious wind shields of one kind and another were shown, some of them folding over in such a way as to give almost the effect described, but none that I saw embodied the idea in its entirety. The necessary curve to be given should not be difficult to ascertainment, and once the advantages of the system become generally known there should be no difficulty in popularizing such a style, which would add greatly to the comfort of riders.

ROAD DIRT IN THE MECHANISM

Analytical Experiments of an Expert and His Deductions from Them—Suggestions Preventing the Evil.

Recent investigations have shown that the effect of fine particles of dust drawn into the carburetter of the automobile engine from the atmosphere, is far more widespread and general than had been supposed. Considerable new light is now thrown upon this subject by the investigations of a Scotch experimenter, G. D. Macdougal, of Dundee, who has gone farther into the matter than has been done before, testing first, the fine deposite found upon the walls of the mixing chamber of the carburetter after it has been in use for some little time, and second, the spent oil drawn from the crank case of a motor which had been undergoing road service. The presence of common sand in both instances, though almost unaccountable, especially as discovered in the old oil, nevertheless points to the desirability of excluding it from the carburetter air ports, which appear to be the only points of posisble entrance for it. Such a method he alludes to in a recent article in the Autocar.

It will be remembered that early in the year a foreign investigator announced the then startling conclusion that the so-called carbon deposits in the combustion spaces and over the valves of automobile motors, was composed largely of mineral and siliceous material, which could be accounted for in no other way than on the supposition that it had been drawn into the cylinder through the carburetter. Up to that time it had been supposed that the carbonization of the cylinder lubricant, coupled with a certain amount of redisuum derived from imperfect combustion of the fuel, constituted the only possible sources of such deposits. Later tests showed that in some cases as high as 90 per cent. of the deposit must be attributable to highway dust, and to nothing else. Mr. Macdougal, working on this hypothesis, examined the walls of the mixing chamber with a view to analyzing the deposit found there.

"The dust of ordinary macadamized roads consists essentially of the powdered stones or material of which the road is made, and such organic matter as may be dropped upon the road surface," says the investigator. "Road dust finds its way past the ordinary barriers against its way past the ordinary barriers against its entrance in much larger quantity than is generally supposed. If a small piece of cotton wool slightly moistened with glycerine is rolled round the end of a wire and this miniature swab brought in contact with or rubbed against the walls of the passages either leading to or from the carburetter, or against the walls of the carburetter itself, or the valve chambers of an ordinary automobile petrol engine which has been running for a little while, on subsequently pressing the cotton-wool against a microscope slide or cover glass and examining with a moderate power, a large number of sandy-looking particles will in nearly all cases be seen. Under certain circumstances sufficient of this material may be collected to allow of chemical analysis. The following figures were obtained from the examination of one specimen of swabbed out material:

"Volatile constituents, consisting of unremoved oil, moisture, etc., 19.20; organic matter (variable according to nature of road surface), 3.20; calcareous and other material soluble in hydrochloric acid (variable according to nature of road material), 7.25; sand, 70.35—100.00.

"Some of the silicious residue was made into a slide for enlargement, and examined under the microscope. The sharp and angular character of the sandy particles was clearly apparent. Regarding this, he continues:

"As a grinding or finishing polish for valves when undergoing repair, this material might be of value, but it will be agreed that its more or less continuous presence under normal working conditions can only result in needless wear and tear of valves, piston rings, etc. The ordinary wire gauze of 3,000 to 4,000 mesh to the inch will not keep out dust. The above slide was from an engine thoroughly protected so far as this could be done mechanically by wire gauze of 3,500 mesh to the inch, assisted by cotton cloth of such fineness as not to throttle the air supply. If wire gauze is of finer mesh than 4,000 to the inch, it rapidly becomes plugged up and gives trouble through throttling the air supply. Indeed,

"There is nothing to effective, in the writer's opinion, for the stoppage of road dust as a large number of comparatively large passages kept in a moist condition either with water, or, better, some sticky or adhesive non-evaporating material, such as glycerine. Sugar and water or golden syrup on suitable sponges or very porous material is the finest filter yet experimented with.

"If the drain cock at the bottom of a crank case be opened and some of the dark oil obtained and microscopically examined, there will be observed solid-looking particles of a different character as compared with those from the valves and passages. Under certain circumstances, it is possible by treating the whole of the oil contents of a crank case to separate sufficient solid material to admit of chemical analysis. One sample of such material yielded the following figures:

Volatile matter	26.87
Loss on ignition	12.34
Metallic iron	25.36
Sand	35.43
	100.00

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REAL VALUE OF SPECIAL STEELS

Eames Discusses Their Place in Automobile Engineering—The Problem One of Lightness and Strength.

A great deal is heard of special steels, and their application to automobile construction. In fact it is occasionally made to appear that the car which is not built of specially compounded metals is lacking in some of the essentials of successful operation, though the suggestion is usually one of pure inference. The fallacy of this idea, however, as well as the exact purpose of the special automobile metal, and the economical limitations of its use, are brought out for the first time by Hayden Eames, of the Studebaker Automobile Co., in the following interview, in which he characterizes the use of special steels as a "craze."

"The craze for special steel is a phase through which the automobile industry at the present time is passing. It is held out as a general panacea for all ills, without care or thought as to its proper application," remarked Mr. Eames.

"The automobile engineer cannot follow formulas which hold good for a large stationary engine and which do not hold at all for the modern high-speed motor.

"The practices of modern automobile construction have been largely those of adaptation. They are, in every sense of the word, empirical, and the factor of safety is sometimes as high as 200 or 300.

"That special steels have their place in automobile engineering is undoubtedly a fact, but if they are to be valuable, if they are to bring anything to the automobile industry, it must be done by the elimination of weight.

"A car which claims a special steel for every part, when the designer has no knowledge, or to put it plainly, when there is no knowledge to be obtained that is particularly adapted for this part, is experimenting.

"To be more explicit, if a 50-point carbon steel has been found by practice to be sufficiently strong for a certain point, then nothing is gained by replacing it with a special steel unless the weight is actually reduced, and so far as I have been able to judge, this has not been accomplished.

"From an advertising point of view, the special steel proposition sounds attractive to some people. It is a talking point pure and simple. To illustrate my meaning, the Studebaker chassis is composed of steels which have been adopted and which have proved satisfactory by the best foreign manufacturers. In building, it has been our aim to produce as light a car as is consistent with strength. Comparing this chassis with other cars using so-called special steels, in almost every instance we have found our chassis to be lighter. Therefore, why make any change?

"If a bar of steel tests a certain per cent. stronger than a similar sized bar of other material, and the size is reduced on these figures alone, it does not follow that the smaller bar is going to stand up in the various stresses to which automobile parts are subjected.

"I do not want to be understood as decrying the use of special material, but I do most emphatically disapprove of blindly substituting something which is comparatively unknown, for something which has been tried by practice. Since practice only can determine its worth, I am not disposed to place any particular value upon a car composed of special steels which weighs no less than an automobile built of materials which have been proved by time and experience to be satisfactory."

Ten Commandments for Fire Users..

What might be termed the ethics of the tire problem is embodied in the text of a cleverly devised hanger which the Firestone Tire & Rubber Co. is distributing to be hung in garages and such other places as will keep it before the eyes of commercial motor vehicle chauffeurs. It is replete with hints of value to chauffeurs of every class. It is printed on heavy parchment paper in the form of a certificate bearing a large and formal looking seal, and certifies that its possessor having "the interest of his vehicle at heart, and unmindful of the yearnings of the repairman and the junk dealer," has adopted the "Chauffeur's Moral Code," as follows:

(1) I will not over-load or over-speed my vehicle, because this will be harmful to the mechanism and tires. I realize that a good rubber tire has a certain amount of "life" and if persistently overworked it cannot recover.

(2) I will always keep the brakes working evenly and the axles and wheels "trued up." I can thereby save rack and wear on my vehicle and prevent unnecessary strain on any one of the tires.

(3) I will not allow oil or grease to accumulate on my rubber tires, as this will eventually cause decay.

(4) I will never expose my tires to burning heat as the wear-resisting properties of the rubber would thus be destroyed.

(5) I will always remember to start my vehicle in a straight line before turning the steering wheel; because by turning front wheels when vehicle is standing still, a heavy and unnecessary strain would be placed upon the tires.

(6) I will start and stop my vehicle gradually and avoid jerky motions under all circumstances.

(7) I will not persist in running my vehicle along street car rails, as that would grind down the edges of the tires.

(8) I will always, when possible, choose a smooth pathway, avoiding obstacles and road irregularities; and will cross car tracks preferably at an angle.

(9) As merely resetting or repairing a tire will in many cases double its life, I will have my tires attended to promptly when damaged, in order to secure the greatest amount of service from them.

(10) And above all things, I will use my influence to have my vehicle equipped with the best tires made—"Firestone" side-wire motor tires.

PRINCIPLES OF THE SPARK PLUG

Weiss Explains Them and Specifies Causes of Misfiring—He Describes Various Methods of Manufacture.

Whatever may be the primary cause of the difficulty, the spark plug usually is first to come into question when the motor begins to miss-fire. Yet so simple is the construction of the average plug, and so excellent its behavior as a rule, that the average motorist pays little or no attention to its action or condition ordinarily, except when it fails. On this account, the following excerpts from a brief treatise on the subject recently read before the Long Island Automobile Club by Louis T. Weiss, chairman of its technical committee, is particularly enlightening. Also it explains the theory and action of a new type of plug which has lately been placed on the market, and of which great things are expected:

"Causes to which may be traced intermitent or entire stoppage of firing the mixture in the cylinders of the motor are very numerous," says Mr. Weiss, "but we shall mention only a few; such as, the fouling of the plugs, caused by lubricating oils or carbon or carbon compound deposits; the mixture of the gases being either too rich or too poor; too little voltage in the primary circuit causing sluggish action in the secondary, or high tension current; leaky wires, especially those conducting the high tension current; and last, but not least, the 'leakage,' in the plugs themselves. We ought not to say 'leakage,' since it generally is a flowing of current from one electrode to the other, instead of jumping in order to produce the desired spark. * * *

"Most of our automobiles are equipped with jump spark plugs, which necessitate a very high tension current produced either by a magneto, a spark coil, or a vibrating spark coil, the latter giving a number of sparks in contradistinction to a coil without vibrator which furnishes but one spark. In all cases, however, there is necessary a current of very high voltage, but very little ampereage or quantity.

"An electric current, like all other things, takes the path of least resistance, and it is due to this fact, that the high voltage current, of which we have so little, flows or leaks away, especially so since we try to force it to jump a gap. That we make matters worse for the current when compressing the gases which increases the electrical resistance considerably, is shown by the fact that a plug will spark in the atmosphere but not in the cylinder, or still better by the phenomenon which takes place when the porcelain outside of the cylinder is moistened, and a spark jumps from the terminal of the plug to the follower nut, or body of same, a distance of half or three-quarters of an inch, instead of leaping

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across the distance between the two electrodes inside of the cylinder separated by one-thirty-second inch only.

"It seems, then, to be necessary that the insulation separating the two electrodes be a very good non-conductor of the current, and that we expose as little of its surface as possible, so as to afford as little opportunity as possible for the current to flow over, instead of jumping, even when oil or carbon are deposited on their surfaces, etc. The insulator must also stand a high degree of heat, and must be quite strong in order to withstand the rough treatment it sometimes is subjected to. Lava, mica, glass and porcelain are the principal substances which have been used.

"Lava has a very high resistance for the current, but since it absorbs moisture freely it ceases to be so when such is applied either in oil, water or gaseous mixture.

"Mica is still used with some satisfaction. Glass carries the prejudice with it of being too brittle and of breaking during the operation of screwing the plug in place, or when hot and being chilled suddenly.

"One concern, who claims to have a new process of welding it to the body, is making glass insulated plugs, which when clean of carbon, answer as windows through which you can see the fire of the explosion.

"Porcelain, however, we might say, is universally resorted to. The French and German porcelains have a reputation of being far superior to those manufactured in this country. Whether the natural product is better than ours, we do not know, but it is certain that the manner of manufacture has much to do with the quality of the finished article.

"The components of porcelain are feltspar, flint and clay. They are mixed into a plastic consistency, and in Europe, are allowed to remain many months before the plugs are shaped so that they can be turned in a lathe to the proper size and form. And, again, they are allowed to dry very slowly before they are finally fired and glazed. After baking it is necessary to allow them to cool as slowly as possible in order to avoid cracking them. By cracking, we do not mean one pronounced crack, but millions of small cracks, or pores invisible to the naked eye, but detrimental to the non-conductivity of the porcelain.. By piling up the raw material after having been mixed, and leaving it for months and months, we allow the chemical affinity of the different substances time to act and thoroughly combine into really one new homogeneous substance, resulting in a better, straighter and more uniform non-conductor when properly finished.

"We are glad to state that our American manufacturers have recently turned out porcelains for spark plugs, equally good, if not better than the imported goods."

Referring to the new type of plug mentioned, which is of novel construction, he says: "The central electrode is a platinum wire of .007 inch diameter. This wire is placed in position before the porcelain is baked, or fired as it is called. There is no opening between it and the porcelain. In order to be sure that it appears on and does not project over the end of the insulation, the porcelain with the wire in it is passed over a grinding wheel. The cross section of the platinum wire .007 inch in diameter is all from which the current can either flow or jump. The exposed surface being so small seems to not allow a flow even when entirely covered with carbon. The maker tells us that the intense heat of the current oxidizes, consumes and destroys the particles immediately on or about the surface of the platinum and at once produces a gap across which the spark appears. Whether that is so or not, we cannot tell, but if it sparks, that is enough. * * * *

"The inventors * * * claim that it is self-cleaning, and that their experiments with air cooled motor cars and many others were entirely to their satisfaction, and that neither of the four plugs missed fire after being in use many months. Also when starting a motor, other plugs having failed after cranking for ten minutes, theirs would start off on the first pull up."

Lubrication of Brake Surfaces.

Although the principle appears to be an incorrect one, it is sometimes of advantage to lubricate the working surfaces of service brakes. Many of the transmission brakes used on the cheaper grades of car have an unpleasant habit of dragging when not in use, and even a slight amount of lubrication under such circumstances tends to reduce the friction thus developed. It is on the more reliable and powerful brakes used on the larger cars, however, that lubrication is employed to best advantage. In this connection, it tends to prevent the bands from "screeching" and from gripping suddenly, and thus in the ordinary use of the foot brake, prevents the sudden pulling up of the machine, which is at once unpleasant, and injurious to the tires. When the brakes are applied hard, the lubricant soon burns off, leaving the surfaces in their normal condition and with their braking efficiency unimpaired. One well-known American maker, even goes to the length of placing a grease cup on the transmission brake band, for this purpose. In one or two other cases, a spring is introduced into the braking linkage, for the purpose of regulating the pull on the bands to a predetermined amount, and with the same end in view.

Increased Use of Block Motors.

A considerable gain in favor appears to have been made during the last two years by the block type of motor, which is now used abroad quite extensively, more particularly in chassis of the town car type. A couple of extensions of its use are now to be found in the case of the new 18-22 Darracq car, which although of the general town car type, also is suitable for light touring, and is fitted with a touring body in its stock type, while its further application in the new Miesse gasolene engine, which is of the six-cylinder variety, is remarkable because of the great length and general complexity of the cylinder casting required.

The Darracq vehicle, mentioned, is further noteworthy in that it is provided with an axle-mounted change gear, the axle being of the true live type, the main portion being of I-beam section; well cranked, while the gear case is mounted upon it, with the lay shaft running transversely of the car. The only American example of this general class of construction yet produced, so far as is known, is the new Thomas town car chassis, shown for the first time last week.

Adjustment of the Pedals.

Although many of the newer and better cars which are equipped with pedals of the push type, are provided with ample adjustments as to position of the pedals and angle of the foot plates, others are not so supplied, and consequently often prove difficult to drive when the operator does not happen to "fit" the only driving position possible to obtain. In nearly every instance, however, it is possible to alter the position of the pedals slightly, by changing the lengths of the links connecting them with brake or clutch. The angle of the foot plate may be altered to suit conditions readily enough, by drilling a couple of holes through it and bolting on a wooden block, bevelled sufficiently to secure the desired lift or pitch.

How to Loosen the Radiator Cap.

Radiator caps occasionally develop a tendency to stick just when it is most important that they should be loose enough to be removed without difficulty. When this occurs, it is not necessary to force off the offending member by means of a cold chisel and hammer, or to apply that prevalent abomination, the pipe wrench. Instead, by winding a piece of chamois leather about it and twisting the ends tightly together, a sufficient grip may be obtained to loosen it in almost every case. Incidentally, it is well not to screw the cap on too tightly when the radiator is hot, as otherwise it may tend to set when cold, and give considerable trouble.

Panhard Adopts Shaft Drive.

One of the most significant innovations of the forthcoming show season abroad, will be the uncovering of a new type of Panhard car having shaft drive. This machine, which is of 15 horsepower, and built to satisfy the requirements of town and city driving as well as light touring to a limited extent, although typically Panhard in other respects, marks the first departure of that historic firm from the traditional double chain drive to which it has steadfastly adhered heretofore.

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INNOCENTS ABROAD AT THE SHOW

Wild Attempts of Artless Visitors to Explain the Things They Saw—Funny Side of the Exhibition.

"It's like trying to explain a baseball game," a friend who had just paid two dollars at the box office on "Society Night" quietly remarked to me; and he was right. He had been showing his dainty wife how a motor worked and she asked:

"Well, what part of the engine is the magnesia?"

"The what?"

"The magnesia," she repeated.

Then he told her what she meant—the magneto—the mechanism for generating an electric current to produce a spark in the cylinders.

"Well, are the shock-absorbers attached to the electric storage battery, or do they absorb shocks from the magneto, too?"

And so on down the line, even to some talk about the Winton company's Sweet "Sixteen-Six" that had never been kissed.

Motor car shows have their humorous and amusing sides, and it is this element of fun that relieves the monotony of show week for exhibitors and occasionally makes even visitors smile.

The questions that some people ask regarding certain cars and their parts, particularly inquiries made by women, while often exasperating, make life during show week worth living for the men who have to answer these queries.

When the show opened in Madison Square Garden on a rainy Saturday night, I noticed two exquisitely gowned women meet as they entered the lobby. They rushed to each other's arms, kissed, gushed over one another, and at length, one exclaimed:

"My goodness, I never thought I should get here to-night! My car kept sliding and skidding all over the wet asphalt. That stupid chauffeur of mine forgot to put the mufflers on the tires!"

Later in the evening, one of these very women was at her escort's side, when he remarked that a certain make of plug was a very good one.

"What are the plugs for?" the dear, sweet thing wanted to know. "To keep the gasolene from leaking out of the tank?"

Numerous exhibitors wore a smile when they heard about the young girl who was so interested in six-cylinder cars. She seemed like a real, sure 'nuff motor enthusiast and uttered a few really sane remarks and asked several sensible questions about one of the Big Six models. Finally she ventured:

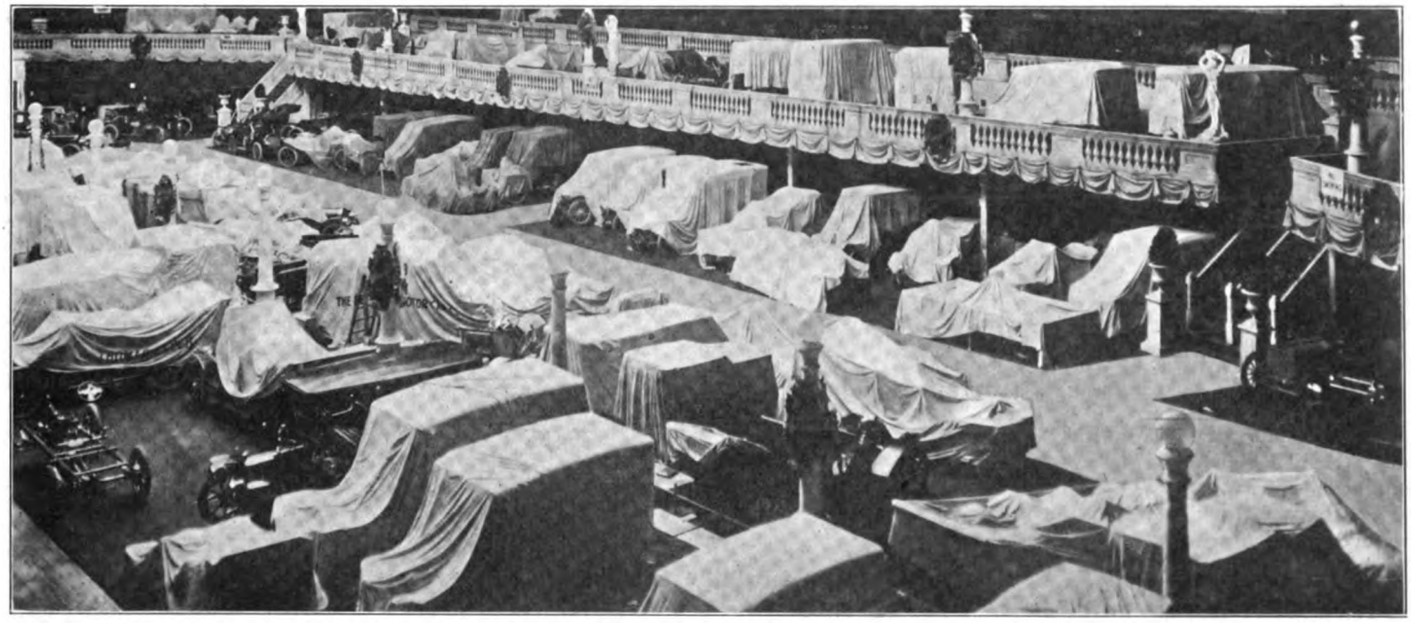
"I suppose they split the motor up into six sections so that a greater division of parts will make it cool more easily, do they not?"

The guards with their red coats and cream white trouserings gave a picturesque and sometimes comical air to the grand entrance. In fact when Barney Oldfield was introduced to a sales manager of one of the large companies and the latter casually asked:

"Oh, are you interested in the sport of motoring, Mr. Oldfield?" the racing driver remarked: "I suppose next I'll be taken for one of those Swiss cheese guards!"

Last year, owing to a mistake in the labeling certain photographs sent to the press, the pictures of these red-coated attendants were printed with the title "Swiss Guards" and a lot of people have not yet learned the difference.

Of course the show would not have been complete without a few wild animals in some of the exhibits. One of the Anti-Jolt Device people had one of those large, ever popular Teddy bears, which they subjected to all sorts of shocks and jars in an effort to demonstrated their product, until they were in danger of having the S. P. C. A. pounce down upon them. The Witherbee Igniter Company had in captivity a fine crop of live bees, in a large glass case shaped like a Witherbee battery, but these bees were not there for the purpose of manufacturing honeycomb for honeycomb radiators, as some of the ladies imagined. Demonstrators at the booth made this point clear.



GOOD NIGHT TO THE SHOW—THE AUTOMOBILES IN THEIR "NIGHTIES"

"You see this is the show given by the Licensed Association," a man at one of the booths explained to a young lady—a sister perhaps—who was in doubt. "The show last week at the Grand Central Palace was given by the unlicensed car makers—"

"Well, doesn't a motorist get arrested if he drives without a license?" the young woman interrupted. Further explanation was necessary.

The services of the motor car police patrol were not required. The company exhibiting this wagon kept two salesmen confined inside its wire walls at all times to show that it was thoroughly suitable and well adapted for police work.

One of the best exhibits in the light runabout class was that of the Alden-Sampson Co., who showed a road train that weighed about as much as a first-class battleship. It was a sort of ship of the desert affair, operated by electric, gasolene and several other kinds of power, applied for use in deserts and such, and had two trailers dragging behind that were a caution. When a young child saw the outfit he exclaimed:

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"Oh, I know what that is. That's Twenty Mule Team Borax!"

Yes, as one of the promoters of the exhibition declared, "an automobile show is more fun than a funeral."

M. W. C.

London Sees Some "Innovations."

As is usually the case, the Olympia automobile show, which opens in London this week, for a twelve days' run, will uncover a number of mechanical "innovations" the like of which have never before been seen—in England. One of these is the "Autolectric," which fulfills the following seven-fold purpose:

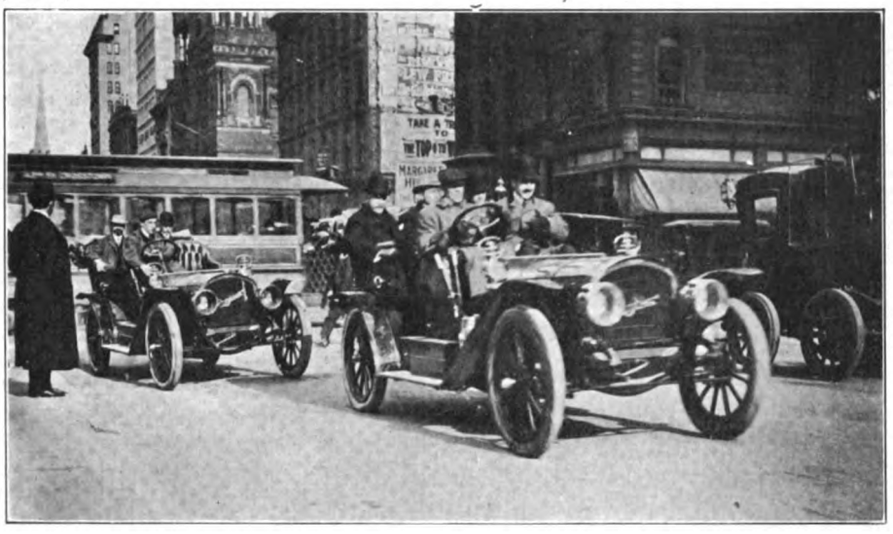
1. Automatic starting by pedal of the engine (Autolectric does the rest). 2. Ignition (high or low tension) of the explosive mixture. 3. Electric illumination of the car (lamps, powerful head-lights, etc.). 4. Electric heating of the steering wheel if required. 5. Inspection lamp for running repairs at night. 6. Electric carburation. 7. Automatic recharging of accumulators.

"Electric carburation," consists in heating the mixing chamber of the carburetter by means of a coil through which the current is passed, a further purpose being served by an "electric pump" which is used in flooding the mixing chamber by simply depressing a button on the dash. The motor is started by sending current from a set of accumulators through the dynamo, which thus becomes a motor for the time being, a special set of gears being used in driving the fly wheel. After the motor is in motion, a direct drive is established between it and the dynamo, the latter then supplying the ignition current directly and without the aid of either transformer coil or high tension distributor, a low tension circuit breaker being attached directly to the cam shaft for the purpose of distributing the current to the various plugs. Save in a few details, the system appears to be a rehabilitation of an old American idea.

RAMBLER SHOW AND AN INCIDENT

High Priests of Seldenism "Caught in the Act"—Display of the Jeffery Offerings for 1908.

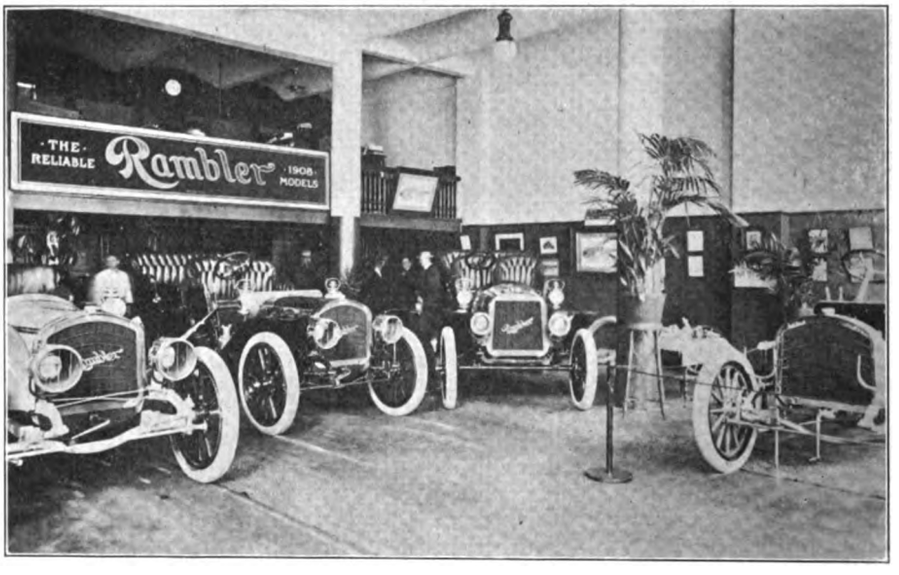
What was considered a good joke on the members of the executive committee of the Association of Licensed Automobile Manufacturers occurred during the preliminaries to the Madison Square Garden Show when an enterprising photographer "snapped" the "licensed" committee members riding in an "independent" car. The protographer's success is indicated by the accompanying illustration, which shows F. L. Smith, of the Olds Motor Works; S. T. Davis, of the Locomobile Co. of America; E. H. Cutler, of the Knox Automobile Co.; Wm. E. Metzger, of the Cadillac Motor Car Co.; George H. Day, and Marcus I. Brock, assistant general manager of the Association, riding in a Rambler car from the Association offices to a private rehearsal of Tel-Harmonic music to judge of the latter's suitability as a show feature.



"LICENSED" COMMITTEE IN "UNLICENSED" CAR

The Rambler being an "independent" car, not licensed under the Selden patent, was not represented at the Garden Show, but was exhibited during the week at a show of its own, held in the display rooms of the Homan & Schulz Co., at 38-40 West 62d street. This show the members of the Licensed Association committee were likewise given an opportunity to see. Palms and pictures were judiciously used to secure an ornate effect and a proper show atmosphere, and the 1908 offerings of Thomas B. Jeffery & Co., of Kenosha, Wis., in Ramblers of various styles were displayed to good advantage, as may be seen by the photograph reproduced herewith.

The Rambler show, which ostensibly closed on Saturday night went one better on both the Palace and the Garden shows, covering in its own way the combined period during which both of those shows were open. Practically it is a year-round show, and its essential features are open to the inspection of the public on every day in the week, from now on.



VIEW OF THE RAMBLER "INDEPENDENT" SHOW

When the Magneto Fails to Act.

When a low tension magneto refuses to act properly although the make-and-break gear appears to be in good order, the ground wire should be disconnected as a test for the insulation on the ignitor side of the circuit. If the ground wire throws an arc on being withdrawn from the frame while the armature is revolving, the ignitors being cut out temporarily, there must be a leak in the ignitor circuit.

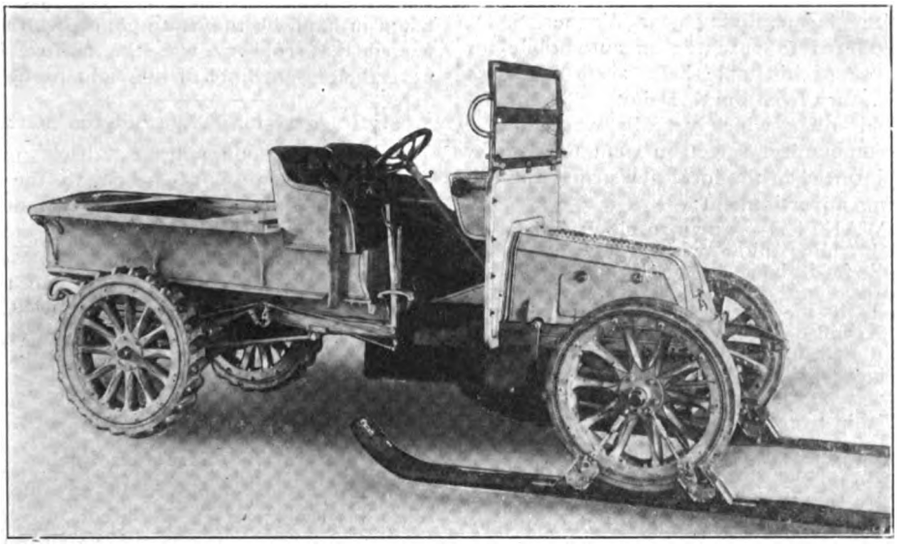
"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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THE POLE SEEKING AUTOMOBILE

Lieutenant Shackleton's Vehicle for Antarctic Exploration Completed—Peculiar Features, Some for Camp Service.

Next to the proposal to reach the north pole by balloon the most fanciful is that of the young English naval officer, Lieutenant Shackleton, who aims to make a "farthest south" by the aid of a motor car. If he never gets any further he has gone so far as to have built an "ice motor car" which, as the illustration shows, is a nondescript, which is expected to serve some other purposes than transportation, such as melting



AUTOMOBILE FOR ANTARCTIC EXPLORATION

snow for the "explorer's" use. The special features in construction pertain, of course, to the wheels. The back wheels are shod with round bars of iron, to grip the snow. When the surface is hard and slippery spikes can be screwed into holes in these iron tires, giving the wheels a grip on the ice. The front wheels have solid rubber tires and are mounted on runners resembling elongated toboggans. A 12-15 horsepower engine, air-cooled, supplies the power, and a special feature is a pipe from the exhaust, laid under the footboard to act as a foot warmer, passing also through a small tank for the purpose of melting snow when water is wanted.

German Opinion of American Laws.

Twenty organizations were represented by one hundred delegates at the annual meeting of the German Imperial Automobile Club at Berlin on Saturday, 2d inst., according to a special cable dispatch. In discussing a proposition for the holding of an international conference for the purpose of obtaining the adoption of uniform speed regulations and license laws, which proposition was indorsed, one speaker declared that the United States would adopt such laws this winter, which may or may not prove true. He expressed the opinion that other countries would do well to copy American legislation, by which evidently he meant State legislation, as the only protection against adverse measures adopted by villages and rural authorities.

Indianapolis After a Rake-off.

Under the vehicle ordinance of Indianapolis the controller of that city purposes bringing to book about 750 local owners of automobiles who have not paid the city license fee of $3. About 1,200 Indianapolis owners are registered in the office of the Secretary of State, and only 450, in round numbers, have paid the city fee.

This ordinance was tested in the Supreme Court several years ago, and was held to be valid, in spite of the fact that it was objected to as imposing double taxation. In addition it was alleged against it that under the State automobile law a municipality may not regulate automobile ownership. The latter objection was met by the claim on the part of the city that the ordinance was a revenue measure.

Massachusetts Insists on Double Tax.

Massachusetts automobilists who have failed to comply with the requirements of the latest legislation by paying the extra license fee imposed are to be debarred from the streets and roads of the Bay State. Failing to make collections the State highway commission has issued to chiefs of police in all the cities and towns a list of the owners who have not paid, together with their license numbers. Each chief has been instructed that cars carrying these numbers cannot be operated legally on the streets and roads.

The latest grievance against the automobile is that of the people who breed carriage dogs. They claim that their business is injured.

FROM CONSTABULARY TO CIRCUS

Secret of Longmeadow's Automobile Chaser is Out—His Road Exploits a Training for Stunts in the Ring.

Charles M. Hanrattie, the constable of Longmeadow, Mass., who was the terror of automobilists so long as he was permitted by the authorities to work his traps and make arrests, is a truant officer at present. His occupation as a chaser after scorching automobiles was spoiled when law-abiding automobilists and the authorities got together to secure respect for the State law.

Since his disappearance from the road it has transpired that Hanrattie's vigilance in bringing scorchers to justice served for him a triplicate purpose—it brought him immediate emolument it afforded him training for a future vocation, and it gave him a measurable fame that may have value as an aid to popular success in that same vocation. In other words, Hanrattie as a constable was qualifying for a circus performer.

Many stories are told of Hanrattie's success in leaping from the road onto a flying automobile to make an arrest. It is said that the only automobile that ever got away from him was going at a 45-mile clip, which was a bit too fast for him. To land on a machine going at thirty or thirty-five miles an hour was a cinch, and he is said to have made his leaps in a variety of sensational ways. Once, it is stated, he leaped over the hood into the front seat and collared the chauffeur. Before becoming a constable he was a railroad brakeman, in which capacity he acquired the knack of boarding cars in rapid motion.

For some time past Hanrattie has been in negotiation with a well known big show, and his prospect for an engagement is believed to be rosy, especially as he has a "drag" with an influential member of the show management. The act in which he will appear is to include four jumps from the ground into an automobile coursing the hippodrome of the circus. He will board the car once at each end and once at each side, the star jump being over the hood into the driver's seat.

To Prison for Stealing an Automobile.

Stealing an automobile in Iola, Kan., is not as easily accomplished as one might think. Getting away with a motor car is not hard , but to retain it without knowledge of the police is another proposition. So thinks Ed Fuller, who took a liking to Dr. P. S. Mitchell's car. Fuller "pinched" the car from the garage, drove it 28 miles northwest of Iola, concealed it in the dense timber, and then went to Rich Hill, Mo., where two deputy sheriffs escorted him back to Iola. On account of his youth the judge sentenced him to a term in the reformatory.

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Nullifying Local Speed Laws.

Speed restriction by local ordinance is receiving close attention from the Massachusetts State highway commission, through the activity of automobilists guarding their rights. The selectmen of Dedham named a number of points where speed was limited to ten miles an hour. Some of these were on thoroughfares traversed by automobiles traveling between Boston and Providence. After several hearings the commission decided that the restriction should apply to only three streets, and to certain short stretches.

Taunton, a much traveled city, with limits extending well out on highways where houses are far between, has an ordinance limiting speed to eight miles an hour within two miles of City Square, and to twelve miles within the city limits beyond that radius. The State commission investigated the conditions with the result of vetoing the ordinance. Automobile travel in Taunton, therefore, is regulated now only by the State law.

Chicopee Plans for Fire Apparatus.

Willimansett, which is within the city of Chicopee, Mass., has the half promise of an automobile fire-truck, the board of aldermen having passed the necessary order through the first reading stage. It will have to be a hill climber, a fact brought out in the debate, but one of the city fathers met the opposing argument, based on that fact, by suggesting that if the truck cannot negotiate the protuberance in the Willimansett section it can be transferred to another section of the city. Another interesting fact alleged during the debate was that, while it is estimated the truck and provision for its housing will cost about $6,500, it would cost $15,000 to provide horse-drawn apparatus and the accommodations for it.

Washington to Regulate Rubbernecks.

Police regulation of sight-seeing automobiles in Washington, D. C., has been undertaken by the authorities of that city. Among the regulations under consideration is one forbidding any such vehicle standing longer than fifteen minutes at a time at any place other than a public hack stand, nor at such place again until the expiration of an hour. Another rule is that no proprietor of a sight-seeing automobile shall have more than two offices within the city, and that only one car at a time shall be permitted to stand in front of each office.

Dick Turpin Up to Date.

Bold Dick Turpin and his good mare Bess would not be in it these days with the automobile. Bess wouldn't be fast enough to keep up with the procession and Dick would run chances of getting knocked skyhigh if he bounced out on a dark lane in front of an automobile. So the modern highwayman needs his own automobile. He held up William Floyd, a retired New Brunswick merchant, on a lonely road 12 miles outside of town, and not only took the victim's watch and money, but his $5,000 touring car. The merchant was driving when he heard a horn sound behind him. Instead of pulling to one side the merchant put on more speed and so did the pursuing car, the occupants of which finally shot holes in the tires of the one in front to compel it to stop. According to the tall story from New Jersey's manufacturing town, the highwaymen compelled Floyd to give up not only his money and valuables, but his touring car.

Automobiles for Farm Hands.

Finding that high wages and a country dance given in their honor did not suffice to keep hired men, Walter Smeetson, a wealthy farmer living near Wagner, S. D., has offered to purchase an automobile for the use of his male help, according to a press story from South Dakota. To emphasize his offer, which verbally was made in the community, Smeetson went to Wagner and inserted in the local newspaper the following advertisement:

> WANTED—A man to plow; will furnish riding plow with canopy top; I will feed, harness, hitch and unhitch horses and carry breakfast to him in bed; if the water doesn't agree with him, will get some from Avon that will; will also furnish him team and buggy to drive evenings and Sundays; should he prefer an automobile, will buy him one.

Within twenty-four hours after the advertisement appeared, Smeetson received applications from a dozen husky men. According to the veracious story-teller, all declined to work, however, until the automobile is brought to the farm. It is said that Smeetson has rented a car pending the arrival of a touring car that he had ordered.

Motoring for the Chorus Girls.

Chorus girls need no longer be dependent upon stage door "Johnnies" for automobile rides. The managers of the New York Hippodrome have purchased fifteen large touring cars to be used in the spectacle which follows the attraction now on the bills. Fifteen chorus men, or near-actors, as they sometimes are called, will manipulate the cars on the stage of the hippodrome. The new spectacle is billed to begin in a couple of weeks, and in the meantime the cars will be used to advertise the attraction. Every morning at 10 o'clock, when the chorus girls go to work, they'll be loaded in the cars, which work they will not shirk; then they'll be joined by other girls from all Shubert possessions, and cavort up through Central Park in mighty gay processions.

Land for San Mateo Boulevard.

The San Mateo Automobile Club, which is engaged in an effort to build an automobile boulevard from that place to San Francisco, has received from the San Mateo Improvement Co. a lot of land valued at $800 as a contribution in aid of the project.

Motorphobia Incites to Crime.

That motorphobia may develop into crime was illustrated in the arrest at Mildale, Conn., of two well known men charged with attempting to wreck automobiles on the bridge there. During the preceding night timbers forming the rail of the bridge were pried off and piled near either end of the bridge in the roadway. An automobile striking either pile would inevitably have been overturned, and its occupants would almost as surely have gone into the river. The men arrested gave as an excuse their hatred of automobilists who, they said, were reckless of the safety of people on the roads. The obstructions were discovered by C. W. Blately, who was driving his car very slowly and struck one of the obstructions without sustaining any damage. The case was taken in hand by the State police, who suspected that robbery was the motive, but nevertheless got hold of the right parties.

Big Registration in Washington State.

Old Dobbin soon will be a back number in Washington, according to the reports of the county assessors in that State. The assessors have been trying to locate all the automobiles and horses in the State in order to assess them for taxes, and they found 721 cars, which they valued at $448,700. They must have missed some as 1,032 registration numbers have been issued. The total valuation of all kinds of horses in the State is $10,281,673.

Natural Gas Serves as Fuel.

Natural gas is employed by an automobilist at Medicine Hat, Assiniboia, to drive his car. According to the tale, no alteration has been made in the original machinery, but a tank to carry compressed gas has been added, with a tube connecting it with the carburetter. Medicine Hat is somewhat off the main line of travel and the name itself is quite suggestive of pipe dreams.

Motor Cars for Piano Delivery.

An automobile delivery car specially designed for carrying pianos has just been put in commission by the Mason & Hamlin company of Boston. It is two-cylinder, 16 horsepower Knox, built to order, and has capacity for two grand pianos at once. It is said that with this vehicle a delivery that formerly took half a day can be completed in two hours or less.

Vanderbilt Cup Winner Burned.

According to telegraphic reports from Ottawa, Canada, the car which won the last Vanderbilt cup race met an unhappy fate. Lord Hale, of Pembroke, its present owner, was touring in Western Quebec, when the car caught fire. It was destroyed.

Houston's garage employees and chauffeurs have formed the Auto and Motor Boat Company, for social purposes. At the organization meeting sixteen mechanics were present and signed the charter roll.

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FARMER ADVOCATES BETTER LAW

Massachusetts Grange Official Working to Bring Agriculturists and Automobilists Together—New Law the Aim.

Among movements for bettering the automobile laws of Massachusetts one that aims to bring together two elements supposed to be largely at variance is being engineered by former State Senator M. A. Morse, of Belchertown, a lecturer of the State Grange. Mr. Morse is engaged in an effort to get the automobilists and the farmers together, through the State Grange, for discussion of the problems connected with the use of roads, with a view to having introduced in the legislature a new automobile law satisfactory to all parties. The matter of "closed" roads is one that would be carefully considered, with the object of devising means to make the exclusive enactments of such towns as Nantucket unnecessary and impossible.

Mr. Morse has found that many of the farmers believe automobilists should be permitted to go as fast as they please on straight stretches of road, where there are no hidden crossroads or where there would be no danger to residents or property; but they believe that the speed at curves should be limited.

The matter will be brought before the State Grange during the annual session in Pittsfield in December and Mr. Morse will endeavor to have a committee of farmers appointed to meet a committee of automobilists. The latter committee he would have appointed, if possible, by the automobile associations. The two committees would be authorized to frame a general automobile law, and by presenting a united front, Mr. Morse believes the automobilists and farmers would be able to secure satisfactory action by the legislature.

Damages Claimed for Injured Tree.

Whether J. Frank Hale's car skidded "wilfully" on a public highway in Hingham, Mass., and damaged an ornamental shade tree is the weighty question that will be thrashed out in district court November 1st. The charge was preferred by Tree Warden Arthur W. Young of Hingham, in behalf of the town, and is the outcome of an accident on Lincoln street early last summer, when Hale's car skidded and banged into an elm tree, wrecking both the tree and the car.

Rotten Bridge Causes Law Suit.

Charging neglect in allowing a bridge to get out of repair, Edward Lawrence, a Joliet (Ill.) automobilist, has brought suit against the village of Channahon, Ill., for $1,000. Lawrence and a party were crossing the bridge over the Dupage river some time ago, when one of the spans gave way and the car and its occupants were plunged into the river. Lawrence and a Mr. Larson, of La Salle, were nearly drowned. The Rambler car was badly damaged, so that Lawrence's estimate of damage seems unusually reasonable.

Speeding Not an Offense.

"On the charge of reckless driving the defendant could not be convicted on the mere fact that he was going at a high rate of speed, unless there was evidence that there was much traffic in the highway as to show danger to human life," declared Judge William B. Stevens in court at Plymouth, Mass., recently, as he charged the jury in the case of the State vs. Andrew N. Winslow, of Newton Centre. Winslow was found guilty in the district court on charges of reckless driving, overspeeding and refusing to stop when ordered by an officer. He was given a three months' sentence, but took an appeal on all counts. The jury acquitted him on two of the charges, but sustained the finding of the lower court on the charge of refusing to stop when ordered to do so.

Wholesale Remission of Fines.

That one good turn deserves another was exemplified a few days ago by the action of Mayor Rice and the city commissioners of Houston, Tex., in remitting all fines assessed in the corporation court against automobilists, the remission being made without solicitation. None of the offenses charged were of a serious or wilful nature. The local automobilists are on the best of terms with the city authorities, and during a recent visit of foreign spinners they responded with alacrity to the request of the mayor and the reception committee to give the visitors a joy ride.

Appeal Against a Prejudiced Jury.

Prejudice of the trial jury against automobiles, or "benzine buggies," as they termed them, will result in a new trial in the case of Mary Sorenson against Clarence Wheeler, in the district court at Omaha, Neb. The plaintiff secured a verdict of $849 for damages sustained in a collision between her bugg and Wheeler's automobile. Because the jurors were manifestly prejudiced against automobiles and took no pains to conceal their dislike, Wheeler has asked for a new trial, which likely will be granted.

Alabama Automobile Bill Dead.

The Blackmon automobile bill, as it was called, which passed both the House and Senate in Alabama, died of strangulation on the governor's desk. The measure was drafted and introduced by Senator F. L. Blackmon of Calhoun county and the most important feature of it was the provision that would have caused motorists to stop whenever meeting a horse or mule. The measure went through both houses but it was not approved by the governor.

JUDICIAL NARROWNESS REBUKED

Severe Construction of the Law's Letter Disallowed on an Appeal—Decision Relative to "Stop" Signal.

Narrow reading of a law may mar the intention of the enactment, according to a recent decision of the Indiana Supreme Court. The decision reversed the judgment of a lower court which quashed an indictment charging Samuel Goodwin with failure to stop his automobile on signal. The affidavit set forth that Rosa and Josie Case, driving in a buggy on a highway in DeKalb county, met Goodwin traveling in an opposite direction in an automobile, the latter ignoring Josie's signal to stop. Rosa, who was driving, was using both hands in the effort to control the frightened horse. The lower court held the affidavit insufficient because the signal was not given by the driver.

Judge Hadley of the Supreme Court, in reversing this judgment, said it is obvious that the legislative purpose in enacting the law "was to provide protection to travelers on the public highway by vehicle, from the dangers incident to the animal attached to such vehicle becoming frightened at the approach of an automobile. There could have been no reason for the law makers to have designed a greater protection for the driver, or director of the animal, than for other occupants of the vehicle, who would be equally exposed." The court was, therefore, as Judge Hadley expressed it, "unable to give the statute the narrow and severe construction contended for by the appellee, and which seems to have been placed upon it by the court below."

After illustrating what "driving" means in its popular sense, Judge Hadley declared that even a strict construction of the law "would require us to hold that any occupant of the vehicle may give the signal. A contrary construction would be without the letter as well as without the spirit of the statute.

"It would seem highly unreasonable, if not absurd, to so interpret the law as to exonerate the driver of an automobile who refuses to heed a signal of distress on the ground that it was not given by the driver in person. Such a rendering would give immunity in many aggravated cases especially aimed at by the statute, where, as is alleged in this case, the driver becomes so engrossed by his efforts to restrain the frightened animal as to be unable to give it.

"It is hardly too much to say that it was the legislative view that when a driver of an automobile is appealed to to stop, when approaching a vehicle drawn by a frightened animal, if his sense of moral or social duty is not strong enough to induce him to do so, the rigor of the law should be interposed."

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21½ Per Cent

of all cars shown at the Madison Square Garden Show were equipped with

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and

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The Week's Patents.

864,141. Compressed Air Cushion Mechanism for Automobiles. Thomas F. Scott, Everett, Mass. Filed June 14, 1906. Serial No. 321,772.

1. In an automobile, or other road vehicle, the combination with the body and a wheel axle, of a vertical piston cylinder with closed heads, vertical standards fixed to the underside of the body, means suspending the piston cylinder on and between said standards for it to swing in a longitudinal vertical plane on the body, a piston-head in said cylinder, a piston rod extending from the lower side of the piston head to and through a stuffing box of the lower closed end of the piston cylinder, means hanging the piston rod on the wheel axle for it to turn in a longitudinal vertical plane thereon, a by-way or passage connecting the opposite end portions of the piston cylinder, a regulating valve in said byway, an opening at which to charge the piston cylinder, and means to open and close said opening, all for operation, substantially as described for the purposes specified.

864,364. Motor Vehicle. James Forrest, Spokane, Wash. Filed Aug. 23, 1906. Serial No. 331,812.

1. In combination with the axle of a vehicle, driven wheels journaled thereon, gear teeth upon said wheels, a vehicle frame having elongated slots in plates forming a part of said frame and through which slots said axles are adapted to pass, the frame being designed to have a slight vertical movement independent of the axles, means for limiting the upward movement of the frame, shafts carried by the frame, and gear wheels fixed to said shafts and in mesh with the teeth of said driven wheels, as set forth.

864,375. Wheel Rim. Ernest Hopkinson, East Orange, N. J. Filed Sept. 13, 1905. Serial No. 278,329.

1. The combination in a wheel rim, of a main rim member provided on its outer face with a rabbet to receive and form a seat for one margin of a tire sheath and a contractible and expansible side flange cooperating with said main rim member to clamp the margin of the tire sheath in said rabbet, said main rim member and said removable side flange will effect the clamping of the margin of the tire sheath.

864,409. Roller Bearing. Ellsworth J. Edwards, Los Angeles, Cal. Filed Oct. 24, 1906. Serial No. 340,305.

1. In combination, a plurality of rollers, two annular members, one adjacent each end of said rollers, journals carried by said members and in engagement with said rollers, and means in engagement with the outer surface of one of said members and the inner surface of the other member for spacing the members and holding them in position.

864, 409. Roller Bearing. Elsworth J. Edwards, Los Angeles, Cal. Filed Oct. 24, 1906. Serial No. 340,306.

1. A roller bearing, comprising an inner cylindrical bearing sleeve, an outer cylindrical bearing sleeve, collars semi-circular in cross section carried by each of said sleeves, a plurality of bearing rollers having cylindrical body portions in engagement with both of said sleeves and rounded end portions in engagement with said collars, each of said bearing rollers being provided with a plurality of circumferential grooves intermediate its ends, and means for spacing said rollers, said means comprising a plurality of intermediate rollers having circumferential flanges adapted to engage with the grooves of said bearing rollers, and having rods or journals connecting said circumferential flanges.

864,412. Device for Testing Explosive Engines. Harvey C. Estep, Aberdeen, S. D. Filed Aug. 20, 1906. Serial No. 331,342.

1. In combination, a cylinder for explosive engines having admission and exhaust ports, an ignition device adjecent one end of the cylinder, a piston within the cylinder movable toward and away from the ignition device, a duct leading out of the cylinder, the mouth of the duct being uncovered by the piston adjacent the end of its outstroke, and a manually controlled valve in the duct.

864,413. Lens Fastening for Lamps. Ernest C. Everett, New York, N. Y., assignor to R. E. Dietz Company, New York, N. Y. Filed Nov. 20, 1905. Serial No. 288,194.

1. In a lamp, the combination of a lens, a surrounding supporting frame, supporting rods connected at their inner ends with the lens, and individual fastenings which connect the outer ends of the several rods separately with said frame and which are ra-

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dially adjustable, thereby enabling the lens to be focused with reference to the flame, substantially as set forth.

864,534. Air Cooled Engine. Neville E. Harris, Port Huron, Mich. Filed Dec. 2, 1904. Serial No. 235,186.

1. The combination with a cylinder of an explosive engine, of a casing or jacket surrounding the cylinder and inclosing the head thereof, a plurality of tubes extending from the sides and head of the cylinder to said casing and communicating with apertures in the casing, each of said tubes having a lateral opening therein, and means for causing the exhaust from the cylinder to create a current of air through said casing and tubes.

864,586. Gasolene Engine. Le Roy Wottring, Prospect, Ohio. Filed Sept. 17, 1906, Serial No. 334,999.

1. In a device of the character described, the combination with a gas engine cylinder, of a head which closes the lower end of said cylinder, a fuel conduit leading to the lower portion of the cylinder, a check valve located in said fluid conduit and opening inwardly, a hollow piston slidably disposed in the cylinder, said piston having heads which close its upper and lower ends, a check valve opening inwardly which is carried by the lower head, and a check valve opening outwardly which is carried by the upper head.

864,623. Driving Gear for Motor Vehicles. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a Corporation. Filed Sept. 26, 1906. Serial No. 336,254.

1. In a motor vehicle, the combination with an axle having stub axles and wheels journaled on the stub axles, said wheels being provided with internal gears, a motor supported on the axle, and pinions in mesh with the internal gears, means in connection with the stub shafts for supporting the pinions, and double universal joints between the shaft of the motor and the pinions.

864,324. Flexible Shaft. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a Corporation. Filed Sept. 26, 1906. Serial No. 336,255.

1. A flexible shaft, comprising a plurality of knuckles, each having sets of rigid lugs extending longitudinally from one face of a knuckle, and diametrically extending pivots each held in one set of lugs and engaged by a set of lugs of the adjacent knuckle the outer face of said knuckles being screw threaded and a spiral spring resting in the threads.

864,625. Brake Mechanism. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a Corporation. Filed Sept. 26, 1906. Serial No. 336,256.

1. A brake mechanism comprising a brake wheel, a brake band, a fixed support on which the middle portion of the brake band is secured to form two independently flexing side arms for braking engagement with the inner face of the rim of said brake wheel, a fabric covering on the brake band, and a clamping bolt for clamping the cover to the face of the said band, said band having a recess for the reception of the covering material under the head of said bolt.

864,626. Controller for Driving Gears. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a Corporation. Filed Sept. 26, 1906. Serial No. 336,257.

1. The combination with the steering post and the controller for the driving gear, of a sleeve provided with a handle and slidable on the post, a gear journaled on the lower end of the post for actuating the controller, said gear being provided with spaced lugs on the upper face thereof, said sleeve having pins for engaging between the lugs, a fixed collar encircling the sleeve, said collar being provided with parallel slots extending in opposite directions, a pin on the sleeve for engaging the slots, said slots being arranged in different planes and being connected at their adjacent ends by a transverse slot, said transverse slot corresponding to the position of the pin when the controller is at zero position, whereby to provide a positive stop for the controller at said zero position.

12,686. Fluid Gauge. Morris Martin, Malden, Mass., assignor, by mesne assignments, to Boston Auto Gauge Company, Boston, Mass., a Corporation of Massachusetts. Filed May 22, 1907. Serial No. 375,176. Original No. 794,675, dated July 11, 1905, Serial No. 233,329.

1. In a fluid gauge, a tank, a bushing sustained thereby, a head having a pivot, a magnetic needle mounted thereon a float guide depending below said head, a rockshaft having a magnet secured to its upper end, a float controlled by said float guide to turn said shaft, and a ring nut to clamp the head on said bushing in any position in which it may be set when adjusting said head and magnet on said bushing.

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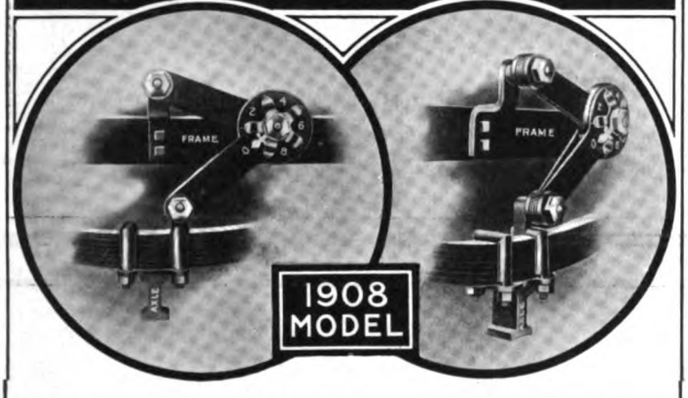
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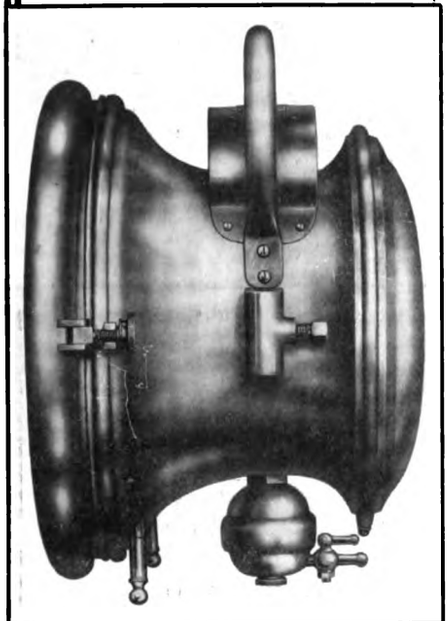
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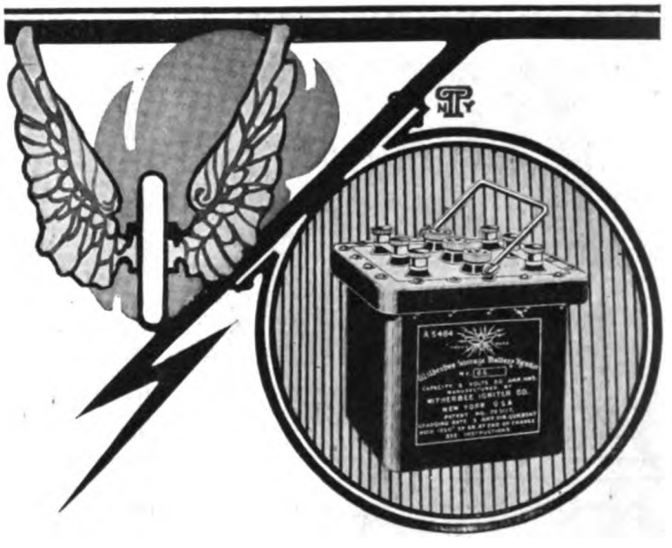
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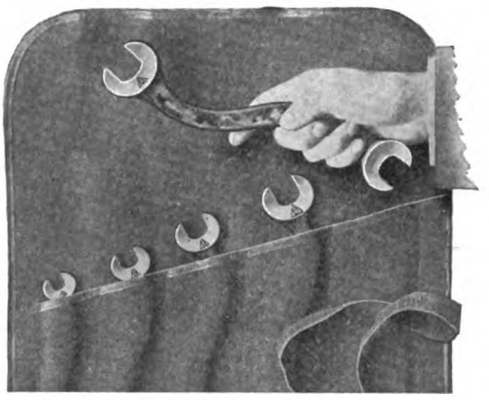
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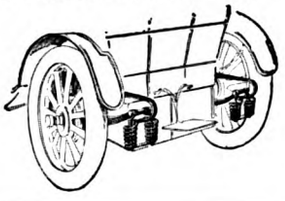


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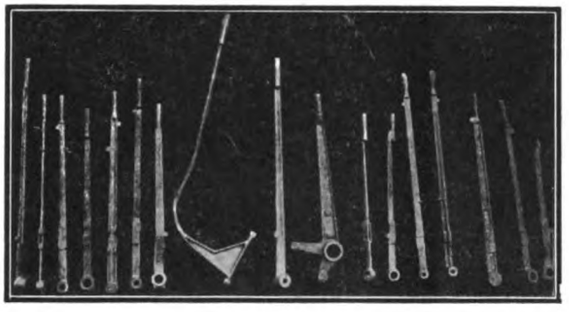


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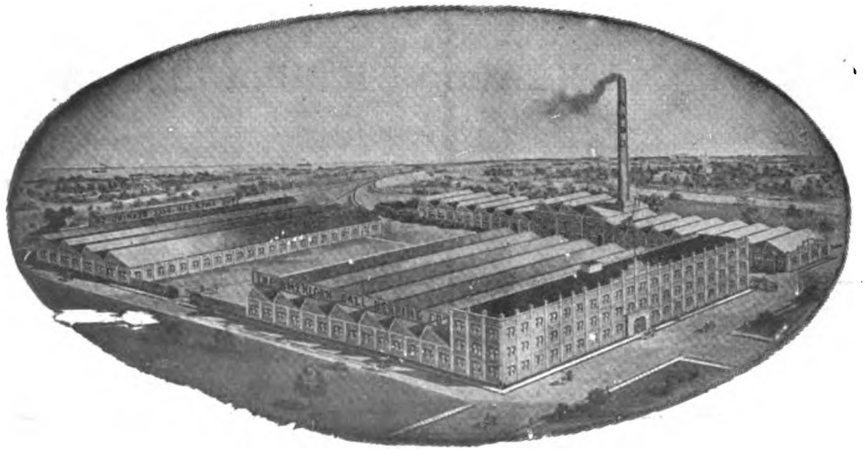
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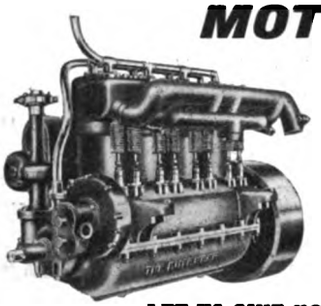
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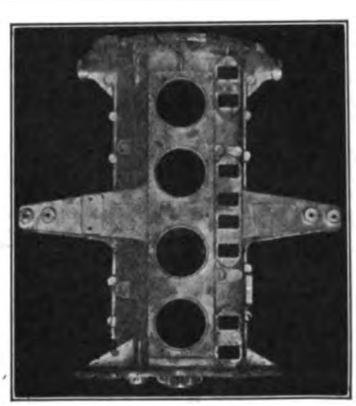
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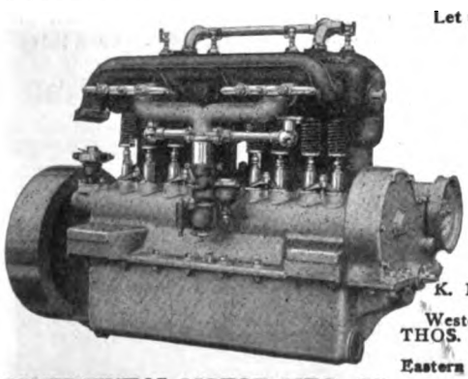
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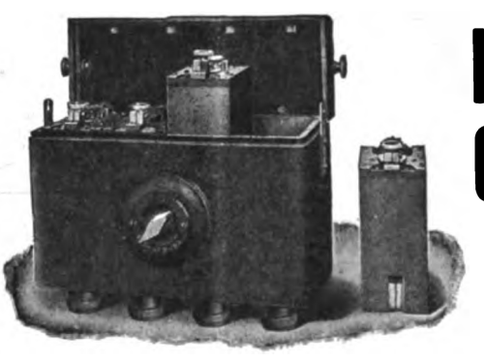
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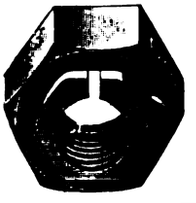
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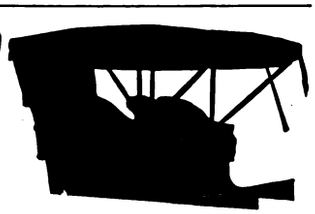
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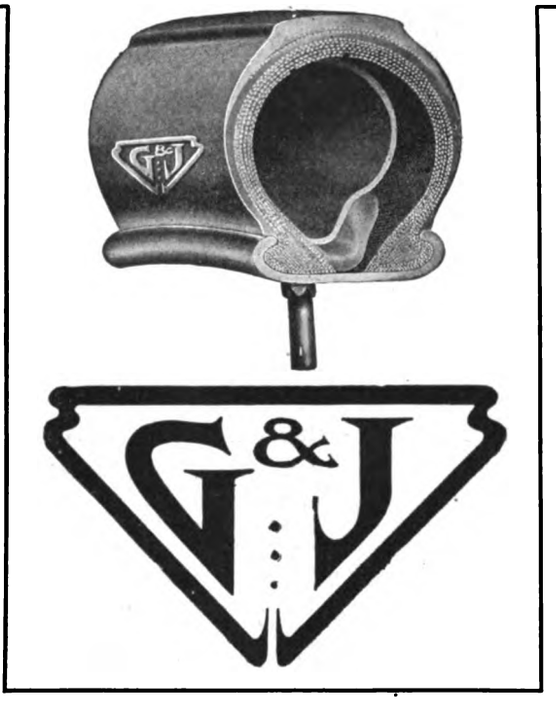
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Combines the **sweetness** of electricity and the **flexibility** of steam with a **greater efficiency** of the automobile motor than was ever before achieved.

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Fully equipped when you get it.

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No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

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The price of the Model "T" is $1,000. It is the same dependable, constant and economical car that the single cylinder Cadillac has always been, only for 1908 it is better than ever.

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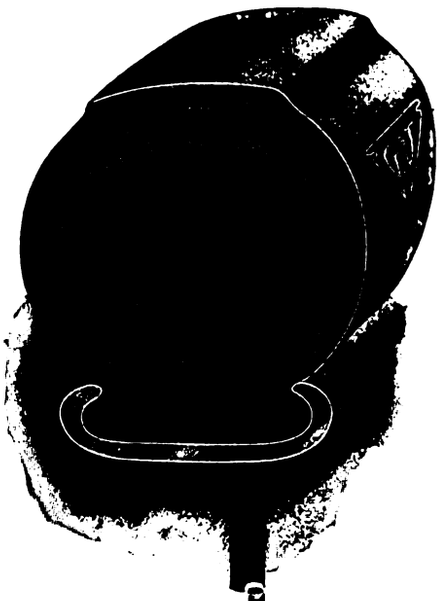
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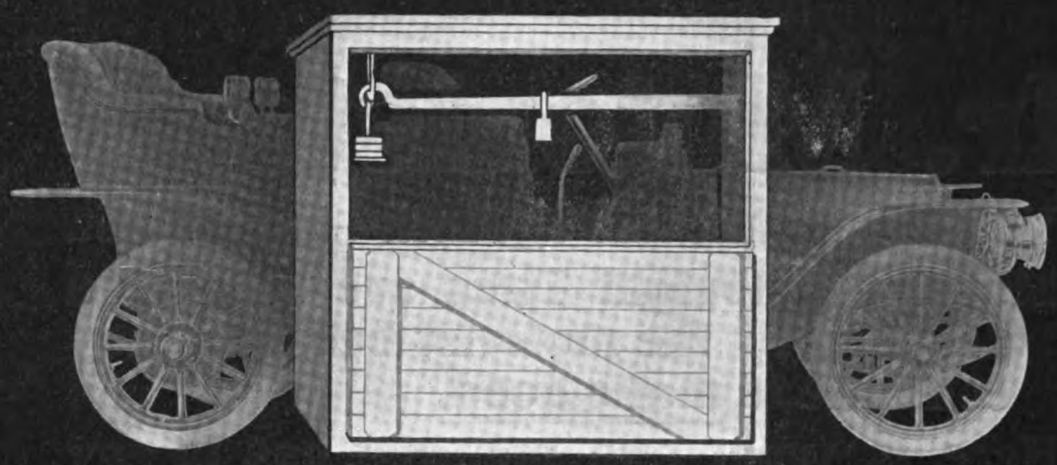
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Don't buy your automobile without having it weighed. Light-weight means net ability and low expense.

Unnecessary weight means loss of power. Repair bills. Gasoline bills. Tire expense. Awkwardness. Discomfort. Danger.

Every pound of superfluous weight means more work for your engine to do. Your horse-power doesn't do so much—less speed, slower work on the hills. What's the use of buying high horse-power and throwing it away on weight?

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A heavy automobile is hard to manage—that means danger.

There is no comfort possible, under average touring conditions, with a heavy stiff-frame half-spring machine.

The 16 h. p. Franklin touring-car at $1,850 weighs 1,600 pounds; the 28 h. p. at $2,850 weighs 2,200; the six-cylinder 40 h. p. at $4,000 weighs 2,500 pounds.

"Run it on the scales." Weigh your automobile—of whatever make—before you buy it.

Send for 1908 Catalogue.

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Morgan & Wright Tires are making a big hit with the motorist because they continue to make good.

Here is what one motorist has to say about good tires.

POLAND SPRINGS, MAINE, Oct. 11/07

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Gentlemen:—Six weeks ago today we left Detroit with our 1908 Packard equipped with your tires; we have crossed the Green Mountains once and the White Mountains twice and have been thoroughly over Maine, New Hampshire and Vermont roads, we have had two punctures on the entire trip, we register today 3284 miles and our tires today look as good as the day we left home.

If your tires last like this what is to become of your repair department? And what's the use of carrying extra casings on our machine? Very truly,

F. E. WADSWORTH.

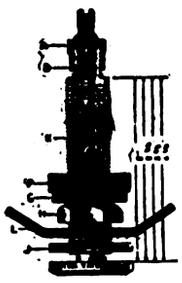
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In 1906 we became aware that some of the American cars were conforming closely to European standards in mechanical excellence and that the American demand was for a car of moderate horse power, cost and up-keep.

We therefore reduced our importations of FIATS and requested Mr. Louis P. Mooers, the well known American engineer, to design for us a model to be known as The **HOL-TAN** Car, which should incorporate those principles and refinements which our experience had shown to be most satisfactory to our former customers.

After a year's work we are now able to offer to the public a satisfactory American car at the right price, **$3000.**

The chassis is made in two models with the same engine in both.

The HOL-TAN STANDARD, Wheel Base, 110 inches, is adapted to open touring car bodies for five passengers or for any Runabout or Roadster design.

The HOL-TAN SPECIAL, Wheel Base, 121 inches, will take a touring car body seating seven or a cab, coupe, landaulet or limousine.

The car is manufactured for us by the Moon Motor Car Co. of St. Louis and includes the following special features:

Motor, 4-cylinder, 4½ x 4½, 25 H. P. with valves in the head.
Ignition, Bosch high tension magneto. Cellular radiator.
Multiple disc clutch. Direct drive. Mooers selective four speed gear.
Drop frame, permitting full elliptic springs in rear.

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THE HOL-TAN CO.

Broadway and 56th St., New York

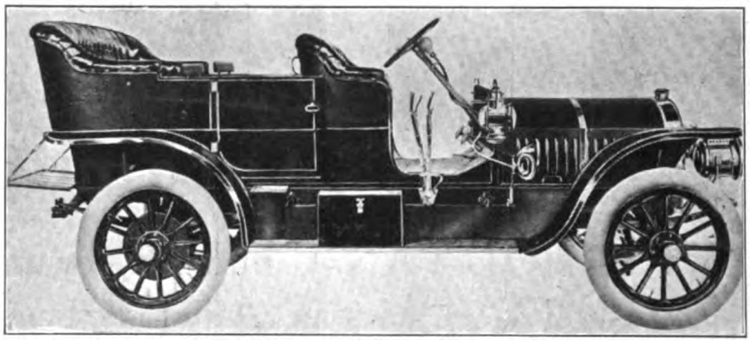
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Each machine carries 7 passengers comfortably.

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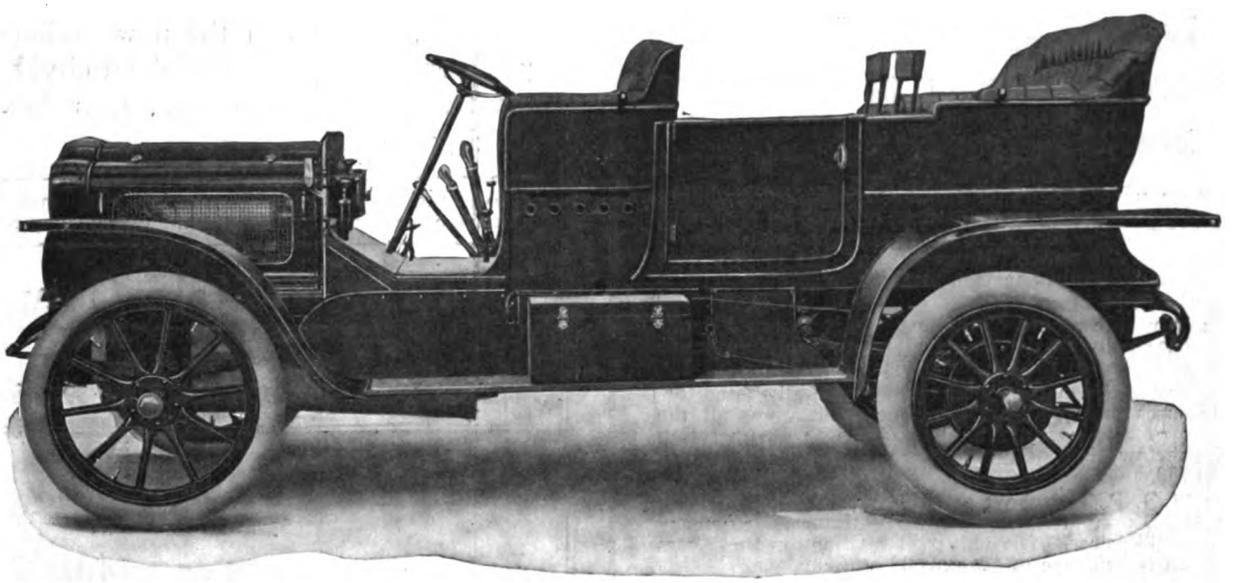
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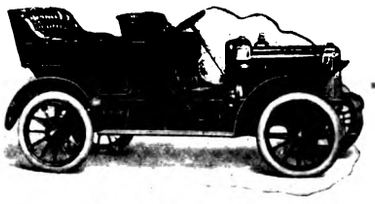
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We would like to send a copy of our new catalog to everyone interested in any phase of motoring. Everyone should read, for example, the description of the White generator, that wonderful steam-making device wherein the water is at the top and the steam at the bottom and wherein none of the conditions of the ordinary boiler are present. The references to the continuous success of the White in all forms of competition during the last seven years will also prove of interest. Also, we invite attention to the detailed specifications of our two models—one of 30 horse-power and the other of 20 horse-power—with touring car, runabout, limousine and landaulet bodies.

A POSTAL TO US BRINGS A COPY

THE WHITE COMPANY
CLEVELAND, OHIO

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24 H. P.—$1.750.

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Because never before in the history of automobiling have touring cars been manufactured on such an enormous scale—and because Mr. J. D. Maxwell, who has designed and perfected the entire "Maxwell" line, has always kept foremost in his mind the fact that the average citizen is not a millionaire.

You know the record of this car. It is an exact duplicate, mechanically, of the famous Deming Trophy Winner of 1906 and Pilot of the Glidden Tour of 1907.

It offers to the man of moderate income all the motoring pleasures enjoyed by the plutocrat—it gives all the efficiency of cars costing infinitely more at an operating cost far below that of any other car of equal size. It costs $1,750.

The 14 H. P. Tourabout at $825 and 20 H. P. Touring car at $1,450 uphold the standard of "Maxwell" efficiency at "Maxwell" prices. The universal satisfaction these cars have given is evidence of "Maxwell" supremacy.

I want you to know this **NEW "MAXWELL"**—ride in it—get a "Maxwell Convincer" at your convenience. Address Dept. 2.

Benj' Briscoe President.

Maxwell-Briscoe Motor Co.

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With ELECTRIC TRANSMISSION

Electricity is not a prime power agent, yet as a means of transmission and control of power it has supplanted all other methods in steam railroads, street railroads, warships, factories, etc., and in the new high powered 7 passenger gasoline car electricity has supplanted all friction clutch, gear boxes and shifting levers.

Also: the light Columbia touring car, runabout and limousine has many and important improvements for 1908

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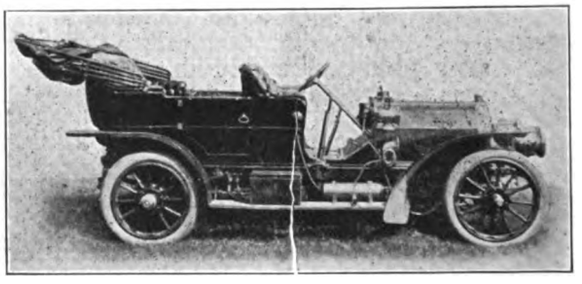
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Type "C" "50"



$2800 **With Magneto, $3000**

Touring Car, Roadster, Touring Roadster, Limousine.

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WRAPPED TREAD
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You may be pretty sure, therefore, that every AJAX TIRE is made "up to" that guarantee.

As long as no other tire manufacturer dares to back his product with as strong a guarantee, it is a natural conclusion that the AJAX **must** be the best.

Write for copy of guarantee, stating size tire you are using,
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stands preeminently the gilt-edge investment of the industry, a position won and held through years of satisfactory service.

The 1908 models mark the nearest approach to mechanical perfection ever attained.

Our advance catalog, now ready, will show you how and why and a demonstration will convince. Both are at you service. Write today or see the nearest Rambler representative.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, November 21, 1907. No. 8

KANE CLAIMS HE WAS "STUNG"

Purchased a "Guaranteed" Second Hand Car and Trouble Followed—Now Wants His Money Back.

The Times Square Automobile Co., New York, which on occasion is said to have caused the rival firm of Morris & Ginsberg to turn green for envy, has been made the defendant in a suit of the sort which caused their rivals to be advertised by many "loving friends." John J. Kane, of Brooklyn, is the plaintiff in the case, and his tale does not differ greatly from those of others who have bought not wisely nor well.

The Times Square concern deals in job-lots and second hand cars and also cars, the manufacturers of which, for various reasons, prefer to be sold outside the usual channels. The Times Square people are wise in their generation and know how to talk of "guarantees" or "warranty" in just the right way at just the right time, and otherwise to drive a bargain in effective style.

Kane was attracted by one of their alluring advertisements and, of course, he was duly impressed by the conversational guarantees. He bases his suit on an alleged breach of warranty and seeks damages to the amount of $2,678.45, made up of $1,200 as the first cost of the car he purchased, and the balance for repairs. Mr. Kane is an old and well known resident of Brooklyn. In his complaint he states that he went to the defendant company on or about April last to buy a second-hand touring car. He had seen the company's advertisements, he said, that appeared in the newspapers, and was shown a beautiful car at the company's place of business. This car, he was informed, he says, had cost $3,000 and had only been run 500 miles. It was in first-class condition, he says he was told, and had only been in use for three months.

There was some bargaining as to price, and Kane made the indirect acquaintance of the stern, but finally relenting, owner who so often figures in sales made at "second hand emporiums." He says he was told that the owner wanted $1,800 for the car, but he was finally told he could have it for $1,200. He paid for it, and, he alleges, it broke down five times on the way over to Brooklyn. He says that the car has been in the repair shop most of the time since he had it, except when it was breaking down with him somewhere in an out-of-the-way place. He has got a good car now, he says, but it cost him more than the price of a new one.

In his prayer for relief the plaintiff asks that the defendant corporation be compelled to take back the car and refund the purchase money, together with the sums he has laid out for repairs.

Dolson Finally Forced to the Wall.

The prolonged financial straits of the Dolson Automobile Co., Charlotte, Mich., culminated on Friday last, 15th inst., in the filing of a voluntary petition in bankruptcy. Three Chicago creditors with claims aggregating $1,000 are responsible for the petition being filed. The book value of the assets are said to aggregate more than $250,000, with unsecured indebtedness amounting to about $140,000. C. B. Hathaway, representing the Muncie Automobile Parts Company of Muncie, Ind., has been made custodian of the plant pending the appointment of a trustee.

Receivership Marks Okey's Quick Finish.

As the result of failure to meet notes for $3,000, C. M. Chittenden, the surety for the paper, on Thursday last, applied for the appointment of a receiver for the Okey Motor Car Co., Columbus, Ohio. Chittenden also alleged that the company's liabilities exceeded its assets. The court named George W. Smith receiver. The Okey company was organized only in January last with $25,000 capital, but if ever it actually built any cars they did not get very far from Columbus.

THE WAYS OF THE PROMOTER

One of the Conspicuous Examples of Means Used to Attract Investors—Impressive Language and Figures.

The "ways of a man with a maid" are probably as queer to-day as they were in Solomon's day, but they are as nothing compared with the ways of the promoter with the "golden opportunity." Such unheard of stores of optimism as he has to draw upon must create envy among the down hearted, but it will be cheering, indeed, for automobile manufactures in general to learn that while they have been worrying over their business problems they have been making money hand over fist, no matter what their books may show. No less an authority than the Carter Motor Car Corporation, of Detroit, Mich., and Washington, D. C., for instance, incidental to preparing the minds of its "prospects" for stock purchase, makes the following statement as to conditions in the automobile trade:

"The purchase of automobile stock is a plain, commercial proposition, not a speculation. One automobile company is paying annually $1,500,000 in profits and is making millions for its stockholders. Several automobile concerns are paying from 100 to 300 per cent. on but recent investments, while all other automobile companies are paying from 10 to 300 per cent. dividends. The man who invested $1,000 in an automobile company only eight years ago, now has a snug fortune of $200,000, and is receiving in annual dividends the sum of $25,000."

The feature of the Carter's promised product is the equipment of two engines per car. Just the manner in which this brilliant conception came to the inventor is dwelt upon interestingly and to some length in the company's literature. It cannot well fail to be of interest to the now pitiful single engine makers and devotees,

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as showing by what fortune they came thus to be put in a hole. Listen to it:

"Despite the fact that rapid transit annihilates distance, from time immemorial throughout the endless succession of centuries, the inventive genii of the world have failed to rise to the demands of trade and commerce, merely seeking an acme of transportation within the time-worn limitations. Finally the noisy nineteenth century railroad car, a cold, methodical, mechanical proposition, whether engine or cable driven devoid of ethical interest save as a mere mode of transportation, made its appearance. Following rapidly came electrical systems for rail and vehicle, and finally the automobile, outdistancing all predecessors with its powerful yet single engine; still the eminence of perfection was not quite reached, one more step forward seemed requisite ere the crowning height would be attained.

"Great epochs of history are conserved by notable dates honored and celebrated throughout the civilized world; to-day's transpirings but enrich the field of future memory. As the Fourth of July, 1776, commemorates our absolution from the thraldom of monarchy, so hereafter will the nineteenth of May, 1905, be remembered as the birth of an epoch of transportation unparalleled in the history of the world, the day upon which Howard O. Carter conceived the acme of motor car perfection, the now famous Carter Two-Engine automobile.

"On May 19, 1905, when miles from home, 'mid moaning pines and grim-visaged rocks, upon a road suffering from a generous outpouring of Jupiter Pluvius, Mr. Howard O. Carter, the inventor of the now famous Carter two-engine car, found himself completely at the mercy of a balky engine which no amount of coaxing could satisfy. Completely fatigued and thoroughly disgusted with the unavailing efforts to continue the trip homeward, the inevitable was accepted, and, after a weary trudge to an electric line, relief and civilization were finally reached.

"The humiliation of the event had so worked upon the hospitality of the gallant host that the 'mother of invention' came to the rescue. The conception came, it began to grow, and, like Mr. Finney's turnip, made famous by Longfellow, it grew and it grew, until to-day we present to the motoring public and to the world the conception perfected, the Carter two-engine automobile. Henceforth, when the host of any autoing party seeks his way through the wilds of the mountain canyons, or winds along the beautiful shores of a river or lake, whether in mid-day or at midnight, he will be absolutely certain of reaching his journey's end, because never more will he pin his faith to a poor single-engine car.

"After weeks of unremitting toil, despite seeming insurmountable obstacles and the derisiveness of auto 'experts,' the theory of a two-engine car was reduced to a practical working model which possessed indisputable points of advantage over all other makes, embracing qualifications absolutely unattainable by others. This triumph caused the so-called 'experts' to view with wonderment this marvel of the auto age. The success in inventive achievement was enhanced when without the disallowance of a single count Mr. Carter received upon his invention exceedingly broad patents, thereby insuring to him the reward of his labor and genius.

"As the moth flies to the flame so now did the scoffer and capitalist alike seek Mr. Carter. Without solicitation numerous flattering offers were made for the control of his patents; but, considering the faithfulness of the few, who in the early days of doubtfulness, when success hung in the balance, were 'friends in need' and who should share in the glories of victory, none were accepted. The formation of an independent company was deemed preferable. Accordingly, upon conservatively laid plans, the Carter Motor Car Corporation was organized and subsequently incorporated under the laws of South Dakota. The capital stock was placed at $2,000,000, with the par value of the shares within the reach of all, namely, $1.00. * * *

"As great oaks from little acorns grow, so from a modest beginning the future seemed destined to eclipse the most sanguine anticipations of the few who had thrown their lot with the vicissitudes of motor car construction. Buckling to a strenuous stock selling campaign, for the purpose of erecting a factory in the vicinity of Washington, the public soon became aware of the pecuniary advantages in the owning of Carter Motor Car Corporation stock, and without hesitancy there was inaugurated a tide of rapid purchase in blocks ranging from 50 to 5,000 shares. The original quotation of 50 cents per share met with popular approval. This campaign of personal solicitation developed so satisfactorily, a broader plan of publicity was decided upon and in the Washington press of January 13, 1907, there appeared the first advertisement offering our stock to the general public at the above quoted price. The result was magical. Inquiries and applications for options began to pour into the offices of the company. Not alone were the responses local, but from far distant States, even Canada and far away Cuba. The future was assured.

"The field before us is unlimited. As yet it has been practically untouched by auto makers, and the success of our company therefore is doubly assured. The extreme unreliability of single-engine cars has been the bugbear in the motoring world. It is just that difficulty we have surmounted. Observing this fact, our order list from prospective purchasers of cars (of every description) is growing daily—the output for the current season having been entirely sold.

"In each and every statement herewith made, either of fact or by comparison, we have endeavored to hew to the line of truth, letting the chips of disconcertion for our competitors fall where they may. We invite the closest scrutiny of both our car and our claims, whether it be a stock or machine purchasing proposition, feeling no hesitancy as to the outcome."

Stock purchase, incidentally, carries with it the privilege of in turn selling stock on commission to one's friends.

Interior Refinements in Closed Cars.

The interior refinements that have been evolved in closed cars recently is well illustrated in the case of the Quinby bodies, all of which now are supplied with individual card cases for man and wife, cases for stationery, a fountain pen, a note book and a clock. Not a few other limousines have been fitted with complete toilet and manicure sets and individual lunch sets to say nothing of speaking tubes, electric lights and other conveniences, while Quinby & Co. have also built several big bodies which, in addition to all the other appointments, include lavatory and toilet accommodations with running water and a large mirror occupying half the roof, which may be let down when milady desires to discover whether her hat is on straight or whether her nose requires a dab of powder.

Maxwell's Belief in Alcohol Fuel.

J. D. Maxwell, of the Maxwell-Briscoe Co., is so firmly convinced that alcohol will be the automobile fuel of the future that he has set aside a special building at the Tarrytown factory, in which experiments are carried on, and has placed a large order for denatured alcohol with a Tacoma concern which is beginning the manufacture of industrial alcohol from sawdust, a raw material that is obtained practically without expense in the lumber regions of Washington. Mr. Maxwell has also designed a special carburetter, which when applied to Maxwell cars will vaporize gasolene, kerosene or alcohol with equal facility.

What Impressed President Studebaker.

J. M. Studebaker, president of the Studebaker Co., who recently returned from abroad, states that the two things which most impressed him were the number of enclosed cars in use and the number of American tourists who were driving American cars. Of the high grade cars he saw on the roads, Mr. Studebaker believes that at least two-thirds of them were fitted with enclosed bodies.

General Machinery Co. Succeeds Smalley.

The Smalley Motor Works, Bay City, Mich., disposed of recently at a receiver's auction for $26,250, has been reorganized as the General Machinery Co. The stockholders elected G. W. Ames, N. A. Eddy, C. F. Eddy, and E. C. wen, directors, who in turn elected Ewen president, C. F. Edy vice-president, and N. A. Eddy secretary-treasurer.

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IN THE RETAIL WORLD.

Edward Mallory, John McCammon and Eber Hotchkiss have opened a garage at Topeka, Kas.

The Whitten & Gilmour Co., which recently was formed to handle the Thomas car in Boston, has established itself at 909 Boylston street.

The St. Paul Motor Vehicle Co., 184 Western avenue, St. Paul, Minn., suffered a slight fire on November 11th. The blaze was extinguished after it had scorched one car.

W. M. Jenkins & Co., Boston agents for the Mitchell, have moved from 304 Columbus avenue to No. 268 on the same avenue. More elbow room made the change necessary.

Five cars were destroyed in a fire that gutted the stable building owned by M. W. Whitney & Co., at Albany, N. Y., Sunday last, 17th inst. The total loss was over $50,000.

Luce & Banks, of Grand Rapids, have sold their North Division street garage to W. S. Farrant. The new owner has taken the agency for the Ford, formerly handled by the Richmond-Jarvis Co.

E. A. Grady and Victor Mills have purchased the garage and business formerly conducted at 418 Santa Fe avenue, Pueblo, Col., by E. A. Griggs. The new owners will continue the business as heretofore.

George F. Kehew has entered the retail trade in Chicago, having secured the agency for the Pope-Hartford. The Orlando F. Weber Co., which previously handled that car, will devote itself wholly to the Pope-Toledo.

The Times Square Automobile Co. has found New York City too narrow for its operations. In consequence, the company has opened a branch for the selling of second hand cars at 309-311 Michigan avenue, Chicago.

A negro porter employed at the garage of the Acme Automobile Co., 3044 Olive street, St. Louis, never again will attempt to scrub the floor with gasolene. He knows the difference between it and water now. A visitor to the garage dropped a match in a pool on the floor while William was scrubbing out, thinking a puddle of water was the safest place to drop a match. The employes and firemen succeeded in getting $50,000 worth of cars out of the garage before much damage was caused.

Factory for Each Maxwell Type.

Despite the practical completion of the big Maxwell-Briscoe plant at Newcastle, Ind., it appears that there is no likelihood of the immediate or entire abandonment of the factory at Tarrytown, N. Y., where, indeed, a 350-foot addition is in course of erection. Following a visit of Benj. Briscoe to Newcastle, it is announced that the plant at that point will be devoted to the two-cylinder Maxwell and the Tarrytown works to the four cylinder model, while the runabouts will be built at Pawtucket, R. I.

Berg Seeks to Block the Transfer.

Charles Berg, a stockholder of the Commercial Truck Company of America, Philadelphia, has filed a bill in equity to restrain the officers of the company from conveying its plant in Blair county to H. S. Kerbaugh, Incorporated. Berg declares that the officers of the company, despite his protest, passed a resolution authorizing the conveyance of the plant, Kerbaugh agreeing to deliver to the Commercial Company $100,000 worth of stock of the concern. Berg insists that the property is worth far more and that the officers had no legal power to authorize the conveyance and that this is vested in the stockholders.

St. Louis Personal Property for Sale.

The trustee for the St. Louis Motor Car Co., Peoria, Ill., is inviting bids for the purchase of the tangible personal property of the bankrupt. The property includes machinery, office fixtures, raw material and several finished and unfinished automobiles. Tenders will be received up to November 22. Meanwhile the referee is taking testimony on the claim of Sears & Burgess, former agents in Chicago for the St. Louis car, who seek to recover $8,000 for commissions and alleged damage.

Duplex Ignition is Short Circuited.

Following the filing of a petition in bankruptcy, John Grunberg has been appointed receiver for the Duplex Ignition Co., makers of spark plugs, etc., at 307A West Thirty-sixth street, New York. The chief petitioning creditor was Fritz Lowenstein, president of the concern, whose claim for money advanced amounts to $1,075. Leo Lowenstein is the secretary-treasurer.

Pratt Out of the Cadillac.

J. Elmer Pratt, for so many years W. E. Metzger's right hand man in the sales department of the Cadillac Motor Car Co., Detroit, has resigned his office and for a while at least purposes indulging his penchant for life in the open. Pratt is such a hard, earnest worker, however, that he scarcely is likely to long remain out of harness.

Willyoung Absorbed by Westchester.

The Westchester Appliance Co. has taken over the Willyoung Appliance Co., of Yonkers, N. Y., makers of ignition specialties, etc. The new concern, which was incorporated last week under New York laws, with capital stock of $125,000, will continue the business at the old stand.

Leather Goods Go up in Flames.

The plant of the Leather Tire Goods Co., Newton Upper Falls, Mass., of which Woodward Bros. are the proprietors, was destroyed by fire last week. The loss aggregates $50,000.

THE WEEK'S INCORPORATIONS.

Beloit, Wis.—Beloit Automobile Club, under Wisconsin laws, with no capital. Corporators—F. M. Strong, L. F. Bennett, W. A. Goss, and H. M. Vale.

New York City, N. Y.—Manhattan Taximeter Co., under New York laws, with $5,000 capital. Corporators—Cecil P. Stewart, Arthur A. Stewart, and Arthur Cleve, all of New York City.

Newark, N. J.—National Automobile Transit Co., under New Jersey laws, with $25,000 capital; to deal in automobiles. Corporators—W. S. Muchmore, William Lochenberg and Lorenzo Habby.

Buffalo, N. Y—Thomas Motor Cab Co, under New York laws, with $50,000 capital; to manufacture automobile cabs. Corporators—E. R. Thomas, Edwin L. Thomas and Arthur Z. Mitchell, all of Buffalo.

Springfield, Mass.—Bullard Specialty Co., under Massachusetts laws, with $100,000 capital; to make speed registering instruments. Corporators—J. H. Bullard, president; A. C. Fairbanks, treasurer, both of Springfield.

New York City, N. Y.—Hillside Motor Car Co., under New York laws, with $40,000 capital. Corporators—Joseph A. Jones, 115 Palmetto street, Brooklyn; Marion S. Sears, 88 Madison avenue, New York City; Robert McC. Robinson, Jamaica, N. Y.

Yonkers, N. Y.—Westchester Appliance Co., under New York laws, with $125,000 capital; to manufacture ignition appliances. Corporators—William H. Cornell, M. Casewell Heine, 76 William street; John L. Lockwood, 60 Wall street, all of New York City.

New York City, N. Y.—National Taxicab Co., under New York laws, with $25,000 capital. Corporators—W .Bernard Vance, 128 Willoughby avenue, Brooklyn; George A. Knoblich, 198 Broadway; Woodford Mowbry, 251 Washington avenue, New York City.

Cedarhurst, N. Y.—American Battery Co., under New York laws, with $200,000 capital; to manufacture batteries of all kinds. Corporators—W. H. Orr, 230 East 179 the street, New York; I. T. Kortz, 297 Waverly avenue, and H. F. Rhatigan, 424 Prospect place, Brooklyn.

Studebaker Branch in Philadelphia.

The Studebaker Bros. Co. of New York have established a branch house in Philadelphia for the handling of the Studebaker cars, both gasolene and electric. It will be in charge of A. J. King, who formerly was connected with the Keystone Automobile Co. of Philadelphia.

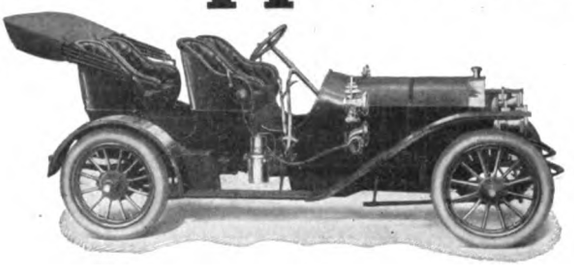
Fire Damages Two Dayton Firms.

Fire last week in the Stoddard building, Dayton, Ohio, caused some damage to the plants of the Dayton Motor Car Co., and the Kinsey Mfg. Co. The loss, however, was slight, not exceeding $5,000 in each case. The fire was caused by a live wire.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, NOVEMBER 21, 1907

The Chicago Show Numbers of the Motor World will bear dates November 28 and December 5.

Concerning Double Ignition.

With the generally increased use of double ignition as applied to cars of the better class, a question naturally arises as to whether the advantage gained is sufficient to repay the added cost of equipment. Evidently it has been answered in the negative by a number of makers, inasmuch as their magneto equipments are made only on specification. Others, who specify the magneto with the regular equipment of the car also make it a practice to include the battery or accumulator and coil service, without extra cost to the purchaser.

Except for the magneto and the use of double wiring, the additional cost of the complete double ignition is not significant. That is to say the increase in cost of one set of spark plugs and high tension leads is not of material importance in itself. The question to be decided then, is as to whether the magneto is sufficiently reliable to warrant its application without the use of an accessory equipment as a standby, and whether the so-called double ignition really proves in practice to provide the actual duplicate system it promises.

On this point, there is reason for grave doubts. For where two sets of sparking plugs are in use, the idle set, being constantly exposed to the play of oil and soot in the cylinders without the clarifying influence of the spark, is liable to foul, and in road service generally is found to be out of order when its service is required. This being the case the process of shifting from one set of ignition to the other involves more than the simple throwing of the master switch. In fact, it usually involves the removal and cleaning of one or more of the plugs which have been standing idle.

Where a single set of plugs is used with two possible sources of primary current, on the other hand no such difficulty exists. Plug trouble is discernable at once, since the same sort of failure developed with one source, holds good when the other is tried. A brief test at the terminal connections on the motor, or on the coil box then is sufficient to locate the seat of trouble absolutely and beyond question. More than that, while the cost of secondary wiring is not of material significance where large and well equipped cars are under consideration, the complication which it involves is of some little moment. Hence, all things considered, the double plug system may be considered as not being altogether advantageous, and indeed, superfluous.

As to the question of reliability, several years of abundant use of the high tension magneto, and the low tension arrangement used in connection with the high tension transformer, has given ample assurance of the suitability of either arrangement for continuous and rigorous service. Its suitability may no longer be questioned. The difficulty of starting the motor under magneto ignition, however, gives sufficient reason for applying the extra battery service to cars of large power, and in which no question of economy of first cost enters. As a standby, batteries are not altogether satisfactory in this connection, since their lower current capacity is not always sufficient to produce a good spark in plugs which have been supplied with magneto current for any length of time. Either system is satisfactory in itself, and either is suitable by itself. The additional security of the double system, while considerable, would hardly seem to be sufficient to compensate for the cost of equipment, however, except in such cases as already mentioned, where economy is not a material consideration.

The Matter of Bank Credits.

At this time, when tight money is the rule, almost anything that promises to relieve the tension is of interest. It follows that a Wall street view of the conditions existing in the automobile industry merits at least some notice. A view of the sort is contained in a bulletin issued by a firm of Wall street accountants, which treats the subject with intelligence and which so far as the matter of credits is concerned, says:

"One of the gravest mistakes of many concerns in the automobile industry has been in attempting to operate on too small working capital. Many such companies have been started with insufficient invested capital, sometimes because of the actual lack of capital and sometimes because of the lack of information as to the large capital requirements necessary to insure success in the automobile industry.

"Starting with insufficient invested capital, demands for additional capital have rapidly increased and the concerns have found it necessary to secure outside aid to protect the integrity of their investment and handle an increased volume of business.

"In many instances, they have made the mistake of borrowing funds instead of taking capitalists into partnership, their desire being to retain as large a share of the anticipated profits as possible. This has resulted in the danger of a large floating debt —current liabilities far in excess of current assets. There was a time when it was comparatively easy to secure large investors in almost any concern in the automobile line. To-day it is far more difficult. To those concerns who are over-extended we would advise the early retirement of their current liabilities, even at a sacrifice.

"On the other hand, there are many concerns who are entitled to reasonable bank accommodation, and who could use such funds safely and to profitable advantage. Banks are slow to encourage new industries by credit extension and many automobile manufacturers have found it difficult to negotiate loans to the extent they believe

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their bank balance and credit entitle them. As the whole automobile industry progresses in conservative administration and strengthened financial position, and as bankers familiarize themselves with the conditions of this line of business, the easier will it become to secure propore bank credit.

"The best policy for the individual manufacturer seeking credit, is to shape up his financial position, systemize his business methods and thoroughly organize his factory. The careful examination of the books and affairs and report thereon by a reputable professional accounting firm, preferably specialists in the automobile industry, tends to gain the necessary confidence of bankers."

Of course the obvious object of the bulletin is to secure employment for the "professional accounting firm" that issued it, but whether or not the services of a concern of the sort will prove a short cut to extension of credit, there is no doubt that there is much of sage counsel embodied in its views.

Is It a Sport or a Business?

It is not strange that the all powerful Amateur Athletic Union has put up the bars against the American Automobile Association type of "amateur." It was almost inevitable that the first time his standing should be called into question that the A. A. A. "amateur" would receive his proper brand.

Sport is sport, it matters not what implement may be used in its pursuit and the man who engages in it for the money it may net him, or who places himself on the same level with the cash chaser, has no right to the title amateur. He is a professional and should be so stamped and the attempt of the A. A. A. to close its eyes to the fact is as condemnable as its effort to set up a caste definition by making, not racing for cash, but the nature of a man's occupation, the chief distinction between professionalism and amateurism. That sort of thing savors of snobbery in its worst form. It might be rather embarrassing for a man of means to find himself pitted against his former chauffeur, or some other man's chauffeur, but to hold that he may so compete and yet remain an amateur, while the workingman is, ipse facto, a professional, is ridiculousness of the side-splitting sort.

The so-called "gentleman amateur" long since so thoroughly merged with the misty past that he is part resurrection. The amateur definition applies to all men without distinction of whatever sort and the sooner the A. A. A. realizes the fact the better it will be for the sport of automobiling and the less its own position will be compromised and made appear inconsistent. Possibly the action of the Amateur Athletic Union may assist in quickening the A. A. A. conscience. As the A. A. A. rules themselves further declare a professional to be one who has been so stamped by other governing bodies and as the rules of all such bodies make competing for cash or against professionals the chief foundations of professionalism, the fact that the A. A. A. practically "outlaws" all who engage in competitions under its own provisions is manifest to any man with half an eye, and shows the full inconsistency of its position.

Because a millionaire who desired to pose as an amateur sportsman and yet despite his unlimited resources wailed that "automobile sport is expensive," and urged therefort that money prizes were necessary—because this sort of alleged amateur had to do with moulding the A. A. A. rule is no sound reason for its continuance. There is no disgrace in racing for money. The shame of it is in permitting the men who want it or who need it, and who race for it, to masquerade as amateurs. There is further shame in that A. A. A. rule which legalizes the use of assumed names in order, if they find it necessary, that competitors may deceive their families or life insurance companies, or both.

Automobile competition is either a sport or a business and the distinction should be made clear. It is assumed that the A. A. A. considers it to be a sport, and if this assumption is correct, it should be placed on the basis of sport, of which amateurism is the fundamental principle. When the A. A. A. performs that act, it is likely to discover that the sport will become not the pursuit of the tradesman, but a pastime for the private owner, who is its bulwark and who should be encouraged by every means possible, but whose interest now is wet-blanketed by the rules that offer him no inducement and afford him small chance for successful competition.

Motor Print certainly knows good things when it sees them, but when so very many of them are "lifted" from the columns of the Motor World it would seem that the re-Print's conscience would be pricked sufficiently to give credit where credit is due, say at least once in a hundred cases. It may be very kind to regularly "borrow" page after page of matter and to hold it until it is thoroughly seasoned—or half forgotten—but then to parade it under big black headlines as the product of professors or engineers with high sounding and fanciful names is—well, "2 mutch," especially when the practice is continued for a year or more.

COMING EVENTS

November 26, 27, 28, Chicago, Ill.—Chicago Motor Club's three days' 600-mile reliability run.

November 28, Wilmington, N. C.—Automobile races on Wrightsville beach.

November 28, Riverside, Cal.—Annual hill climbing contest on Box Springs hill.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

December 7-14, San Francisco, Cal.—Automobile Dealers' Association of California's second annual show in the Coliseum.

December 9-14, Detroit, Mich.—Detroit Automobile Dealers' Association's show at Wolff's pavilion.

December 14-21, St. Louis, Mo.—St. Louis Manufacturers' and Dealers' second annual show in Jai Alai building.

January 14-18, Hartford, Conn.—Hartford Automobile Dealer's Association's annual show in Foot Guard Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sportsmen's Association's show in Light Guard Armory.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's show.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association show in Duquesne Garden.

Press agents are very useful persons, but receipt of an item of the kind impels us to remark in all kindness that however impressive, it behooves the p. a. to leave unheralded reports of fast performances between New York and Philadelphia, or between any other points entailing travel in New Jersey. That State is possessed of a lynx-eyed Commissioner of Motor Vehicles and publication of reports of the "sort" are known to have attracted his attention and to have made very much more than a peck of trouble for several men in the trade.

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SEVEN MADE PERFECT SCORES

Fourteen Survivors in New Jersey 24-Hour Endurance Run—One of the Contesting Cars Destroyed by Fire.

Covering 472 miles over road that varied in condition from the finest macadam to a mere path across a swamp, without a repair or replacement, without involuntary stop of engine and on schedule time is the notable record of seven cars in the 24-hour endurance run promoted by the New Jersey Automobile and Motor Club, which finished in Newark, N. J., Saturday afternoon, 16th inst. The seven cars with perfect scores and their drivers, were: Matheson, John B. Ryall; Locomobile, R. A. Greene; Oldsmobile, Ralph R. Owen; Franklin, F. C. Tinni, Jr.; Thomas, Montague Roberts; Ford, A. T. Purcell, and Haynes, R. G. Kelsey. The Haynes and the Ford were runabouts; the other five touring cars. The lucky seven cars that finished will be awarded silver loving cups. Of the 22 cars that started in the contest Friday afternoon, fourteen survived the twice-around-the-clock contest, the others having been withdrawn for a variety of reasons.



SCENE AT THE FINISH, SHOWING NEWARK'S INTEREST

Mayor Hausling, of Newark, fired the starting gun that sent the first car, Ryall's Matheson, on its way at 2 o'clock Friday afternoon, and the others left at one minute intervals. There were thirteen touring cars and nine runabouts, C. E. Johnston's Continental failing to put in an appearance. This contest of the New Jersey organization was the most unique and undoubtedly one of the most strenuous endurance contests that has ever been held in this country. The drivers were required to keep going continuously for 24 hours over a five-lap circuit. Arriving at a control more than three minutes behind or ahead of schedule meant a loss of two points for every minute, and to keep to schedule during the night was hard work. The other points considered were: To stop motor between controls without making an adjustment or repair, 3 points per minute; to stop car on last circuit without making repairs or adjustments, 3 points per minute; to stop motor for purpose of making repairs or adjustments, 4 points per minute; to repair car or make replacements with motor running, 2 points per minute; to drive car in a circle to delay passing final control, 2 points. Double penalties were imposed when the driver received assistance in making repairs or adjustments.



TYPICAL NEWARK CROWD AROUND A WINNING CAR

The course was from the club house in Newark to Bloomfield, Glen Ridge, Montclair, Verona, Caldwell, Pine Brook, Parsippanny, Denville, Dover, Kenvil, Mount Freedom, Morristown, Benardsville, Far Hills, Bedminster, Somerville, Bound Brook, Plainfield, Springfield, Irvington, and back to the club house. This circuit was traversed five times.

Stories without number could be told about the accidents and incidents, amusing and serious, that went to make up the contest, but none would surpass in interest the tale of the late night and early morning hours of Friday at the club house. All the flotsam and jetsam of Newark that never goes to bed, and hundreds of other persons who do ordinarily, made a night of it. There was much that was fascinating about the cars as they came in from the rounds, with their powerful searchlights throwing streams of white haze hundreds of feet ahead, and then the bustle and activity incidental to filling tanks, changing crews, and so forth. Down in the grill fur-coated drivers, student observers and officials, snatched sandwiches and cups of coffee while their cars were being filled with gasolene and oil, to be off again a minute later. As the night lengthened and the changes of drivers and crews occurred, the scene became more animated. At frequent intervals some belated motorist would stumble into the sleeping room on the top floor, where thirty cots had been set, and drop off into slumber for a few hours.

The most spectacular incident of the night hours was when P. F. Gillette, finished the second round in his Pullman, with a perfect score. All the lamps of the car had been extinguished and some helpers were filling the tanks with gasolene and oil. No one knows how it happened, but suddenly a sheet of flame burst from all sides of the car. Peter LaGreca, who was sitting in the car at the time was pulled from the fiery furnace, but not before he was badly burned. Gillette, who was superintending the filling, also was burned about the hands. The crowd fell back and not an instant too soon for there was an explosion which sent a

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volume of fire toward the sidewalk. This was the end, for the fire had consumed all that was burnable about the car. Three minutes later the fire department arrived on the scene and extinguished what was left of the blaze. The accident was lamentable as Gillette had but recently started in business in Newark and the car was not insured, which means to him a loss of $2,000.



ONE OF THE CAUSES OF PENALIZATION

As the drivers arrived news of incidents on the course was brought in. Several of the contestants reported that an obvious attempt to wreck the cars had occurred at Denville during the night. A short distance beyond Fox Hill grade crossing, where the road winds in and out of the scrub land, some persons evidently placed long tree trunks across the road at intervals of two feet. These, averaging in thickness about four to six inches, were laid at a point in the road where there is a sharp turn and a deep gulley just beyond. J. A. Hopson, driving the Oldsmobile "Mud Lark," was the first to discover the obstruction. Hopson had lost considerable time on account of tire trouble and was way behind the other cars at Denville. At the point mentioned the searchlights revealed something in the road ahead and Hopson braked as quickly as possible, but not before the car had passed over the first piece of timber. Running slowly another log was encountered a few yards further on and then a whole mass of logs laid dovetail fashion across the road. When the car reached the Denville Hotel Hopson sent a telegram to the club house and a car full of officials went out and cleared the road. Other drivers reported that they had seen the obstruction in time to avoid accident.

After daylight the rounds were uneventful, but previous to that just the opposite was the case. The few hours between midnight and sunrise marked the fall of not a few cars from the perfect score position. In attempting to pass a hay wagon on a bad stretch of road between Mt. Freedom and Morristown, the Marmon driven by L. H. Roberts, got into a bog at the side of the roadway and stuck. Attempts to get the car out of the ooze were fruitless and finally the machine had to be pulled out by a pair of horses. It had a perfect score up to that time, but was withdrawn after the accident. Mrs. M. H. Rickey, in the other Marmon, was penalized 341 points when the car ran out of gasolene and the motor stopped perforce. Dr. J. Finley Bell, in the Hewitt runabout, experienced the same predicament. He had a perfect score for one lap until the tank went dry.



MRS. M. H. RICKEY, THE ONLY WOMAN CONTESTANT

I. M. Uppercue, in the four-cylinder Cadillac, came near having a serious accident, when he mistook the signals of some men with lanterns, and instead of taking the right angle turn near Somerville continued straight ahead; the car bumped into a high bank. One of the wheels was smashed, and the time required to get a new one caused the car to lose 1,098 points. The little single cylinder Cadillac entered by Uppercue and driven by I. D. Plank, covered itself with glory. It has been a figure in several endurance contests and was plugging bravely along in this until it bumped into a tree and the engine stopped long enough to entail a loss of three points. This was the only mark against it.

A brief summary will show what happened to the other cars that either did not finish or that were penalized. Hopson's Oldsmobile had clutch trouble on the first round and was penalized 12 points, while ignition troubles caused the withdrawal of Charles Fleming's Maxwell. The other two Maxwells, driven respectively by J. W. Mason and Dan Nichols, also did not finish. A babbit burned from the bearing of Mason's car on the first lap, due to lack of lubrication, and Nichols, after finishing four laps with a perfect score was compelled to quit because a leaky radiator developed. P, H. Johnson, Grout, had no points against him for two laps, and then lost 107 points for accidentally stopping the engine while repairing a chain. William Mazzaco's Mitchell lost 105 points through coil and other trouble. E. Cooley's and E. H. Cadmus's Mitchells were both withdrawn, the

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former on account of the breaking of a truss rod and the latter because of engine trouble. Fisher's Autocar lost 76 points from a broken spark plug and minor troubles. The summary:

Car.	Driver.	Penalization Points.
*Matheson,	John B. Ryall	0
†Haynes,	R. G. Kelsey, J. Calhoun	0
*Oldsmobile,	Ralph Owen	0
*Locomobile,	R. A. Greene	0
†Ford Six,	A. T. Purcell	0
*Franklin,	F. C. Hinni, Jr., C. L. Edson	0
*Thomas,	Montague Roberts	0
*Cadillac,	I. S. Plank	3
*Oldsmobile,	J. A. Hopson	12
†Autocar,	C. E. Fisher	76
*Grout,	P. H. Johnston	107
†Mitchell,	William Mazzaco	105
*Marmon,	Mrs. M. H. Rickey	341
†Cadillac,	I. M. Uppercue	1,098
*Maxwell,	Charles Fleming	withdrawn
†Maxwell,	J. W. Mason	withdrawn
†Maxwell,	Dan Nichols	withdrawn
*Marmon,	L. H. Roberts	withdrawn
†Mitchell,	E. Cooley	withdrawn
*Mitchell,	E. H. Cadmus	withdrawn
*Pullman,	P. F. Gillette	burned
†Hewitt,	J. F. Bell	withdrawn

* Touring car. † Runabout.

A. A. U. Bars A. A. A. "Amateurs."

That the Amateur Athletic Union will not accept the American Automobile Association's "amateurs" who race for cash and against professionals was made clear at the annual meeting of the big athletic body in New York on Monday last, 18th. The subject was brought up on a point of information raised by the delegate from the Federation of American Motorcyclists, which is allied with both of the other organizations, and whose rather unusual position was explained. The short discussion that ensued was followed by the adoption of a resolution instructing the registration committees of the various A. A. U. districts to refuse registration as amateurs to all automobilists who may have raced for cash or against professionals. As the rules of the American Automobile Association make the occupation of the chauffeur in itself an act of professionalism, and yet permit "amateurs" to not only race for cash but against hired drivers, the A A. U. resolution reaches further and affects more men than appears on the surface.

Cobe Again Heads Chicago Club.

Election Day at the Chicago Automobile Club passed off quietly without any arrests being made for illegal voting. There was no opposition, one ticket only benig in the field. Ira M. Cobe, president, and F. H. Pietxch, first vice-president, were re-elected, and T. J. Hyman was elevated from treasurer to second vice-president. N. H. Van Sicklen succeeds Sidney Gorham as secretary, while Charles F. Gregory was chosen treasurer. The board of directors consists of John Farson, A. J. Banta, W. W. Shaw, Claude Seymour, T. N. Koehler and F. D. Countess.

MILE-A-MINUTE HILL-CLIMBING

Cedrino's Fast Time at Rhode Island Meet —Six Events Contested—Burst Steam Pipe Spoils a Finish.

Emmanuel Cedrino, driving a new 60 horsepower Fiat racing car, won the free-for-all class and established the fastest time of the day at the sixth annual hill climbing contest of the Rhode Island Automobile Club at Riverpoint, a short distance from Providence, R. I., last Saturday, 16th inst. Knight's Hill, a half mile incline averaging 13 per cent. grade, was the scene of action, and this Cedrino climbed in 30 seconds, just four seconds less than Blackington, his runner-up, required to make the ascent. Although Cedrino made the fastest time the most glory went to J. W. Grady, whose hill climbing propensities have asserted themselves in the past. In a stock Pope-Toledo Grady won two events and finished third in the free-for-all, and in the latter his time was only seevn seconds slower than that recorded for the Italian.

The day was ideal for the meet and the hill was in good condition. The one bad turn was banked so the cars, most of them, rushed it without cutting out power. The stone wall that follows the road on the right going up was crowded with spectators, and with several hundred persons stationed at the finish, besides fifty or more automobiles, the crowd was estimated at several thousand. There were twenty-three entries but the officials worked in harmony and with such precision that there were no vexatious delays.

Dutee W. Flint started the ball rolling by winning the class for gasolene cars costing $1,000 and less from H. B. Hunt in 49 seconds. Both drove Ford runabouts. Two Stanleys, driven respectively by Baldwin and Blackington, made the going in the touring car class for steam cars, Baldwin winning in 0:36⅕. These two men were the only contestants in the steam runabout class and Baldwin added another cup to his shelf by finishing in five seconds faster than in the previous event.

Three cars contested the class for gasolene cars under $3,000, a Pope-Hartford with Grady at the wheel, a Ford with Myers up, and a Pennsylvania which had Sweeney in the driver's seat. They finished in this order, Grady in 37⅗, Myers in 44⅘ and Sweeney in 55 seconds. In the $5,000 and under class, Grady was timed exactly the same as in the other event, to the fifth part of a second. John L. Snow, of Boston, in a Peerless, was the runner-up; his time was 42 seconds. In another Peerless of higher power Snow won the $5,000 and over, from Crafford, who manipulated a F. I. A. T. Their respective times were 39 and 45⅕ seconds.

What incidents there were happened in the last event on the card—the free-for-all. John Dower, in a Corbin, made the first trial and gave the crowd momentary cause for alarm when he skidded off the road, rubbed along the stone wall and then bounded off. The car suffered no damage and Dower finished in 38 seconds. Grady then essayed to better Dower's time and he did, by one second, but Blackington, who followed, clipped three seconds from Grady's figures. Baldwin in the other steam car did not finish. He had planned to cut a streak in the atmosphere that would put his name down in hill climb history, and in consequence had steam up to a bursting pressure. Baldwin got away like a rocket, negotiated the curves in a hair-raising manner and was on the final straight when the car was suddenly enveloped in steam and started to slide down hill. A pipe had burst and Baldwin and his car were shoved off the course. Cedrino was the last to start and because of this he knew just how fast to drive his car in order to win. He made a spectacular run, but shut his power off before the finish and coasted across the line. At that the watches gave him 30 seconds, the fastest time made at the meet, and which is at the rate of a mile a minute for uphill work. The summary follows:

Gasolene Cars Costing $1,000 and Less.

1 Dutee W. Flint, Ford 0:49
2 H. B. Rust, Ford 0:56⅕

Steam Touring Cars with Tonneau.

1 L. F. N. Baldwin, Stanley 0:36⅕
2 B. F. Blackington, Stanley 0:40

Gasolene Cars Costing $3,000 and Less.

1 J. W. Grady, Pope-Hartford 0:37⅗
2 Myers, Ford 0:44⅘
3 Sweeney, Pennsylvania 0:55

Gasolene Cars Costing $2,000 and Less.

1 Davis, Oldsmobile 0:49⅕
2 I. O. Pugh, Corbin 0:51⅗

Steam Runabouts.

1 L. F. N. Baldwin, Stanley 0:31⅗
2 B. F. Blackington, Stanlev 0:33

Gasolene Cars Costing $5,000 and Less.

1 J. W. Grady, Pope-Hartford 0:37⅗
2 John L. Snow, Peerless 0:42
3 Calvin D. Snow, Stevens-Duryea.. 0:47
4 Sweeney, Pennsylvania 0:50⅗

Gasolene Touring Cars Costing Over $5,000.

1 John L. Snow, Peerless 0:39
2 Crafford, F. I. A. T..... 0:45⅕
3 Congar, Stevens-Duryea 0:51

Free-for-All.

1 Emmanuel Cedrino, F. I. A. T.... 0:30
2 B. F. Blackington, Stanley 0.34
3 J. W Grady, Pope-Hartford 0:37
4 Dower, Corbin 0:38
5 L. F. N. Baldwin, Stanley ..... ——

It is of the utmost importance that the bolts holding together the parts of a live axle housing be drawn up to their full capacity at all times. Any slackness may permit a slight amount of play, which will alter the relation of the parts sufficiently to cause undue wear, besides rendering them liable to rupture.

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GETTING READY FOR CHICAGO SHOW

Decorative Work Completed—Figures Disclose Immensity of Exhibition—Ban on Sub-Leasing Withdrawn.

Although the Chicago show will not open its doors until November 30, the transformation of the Coliseum and armory buildings which are to house it has already begun, and the artistic brush is busy on the 8,704 square feet of canvas, comprising 142 oil paintings, which will make beautiful the setting of the exhibits. Around the gallery front for 668 feet, paintings 8 feet deep will depict motoring scenes, and 112 pictures will form a part of the background of the booths.

While the number and dimensions of the pictures are susceptible to numerical statement and square measure, respectively, in advance, their essence of art quality remains for judgment when they are disclosed but as their execution is in the main under the direction of Maratta, one of Chicago's foremost artists, the assurance is given that they will be of a very high order. Those who have had an advance peek into the studios are enthusiastic, so that the art gallery feature of the show may be expected to prove quite an attraction.

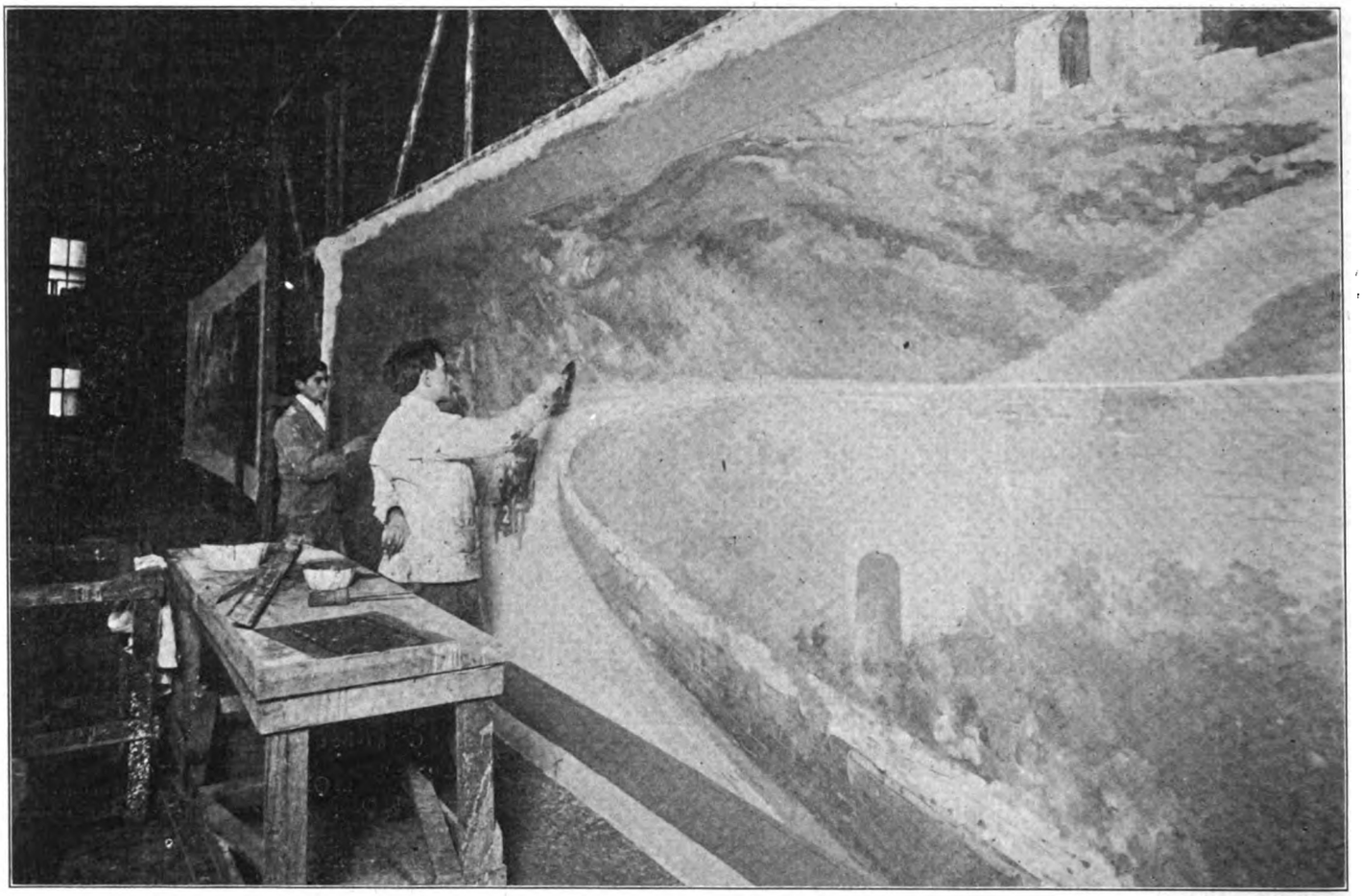
According to the figures of the management, the Chicago show will have more exhibitors of automobiles than the Palace and Garden exhibitions together, the latter two having a total of 110, while Chicago will have 117 exhibits on view. These with the motorcycle section and the accessories, will occupy a space of 110,000 square feet. While 180 concerns are officially scheduled for space in the accessory division, the number actually represented will be considerably greater by reason of the fact that the management has this year abandoned the objection to sub-letting that has heretofore prevailed. This departure is explained on the ground that "the management feels that it would be unfair to prohibit the admission of people for whom it is unable to provide, if they are able to find some kind friend who will take them in."

Heretofore the prohibition against subletting space has been very stringent at all of the big shows because of the speculative efforts of some enterprising persons to get an allotment of as large a space as possible to later farm it out to less fortunate applicants at a profit. The experiment of removing to some extent the ban against it will in its results influence other show managements in the futude.

The great press of applications for space made it necessary this year to add greatly to what was used last year, and these additions alone are said to equal 75 per cent. of the entire space available at the Palace and Garden shows in New York. Exhibitors will be tucked into every possible nook and corner, yet the indications are that there will still be a large disappointed waiting list.

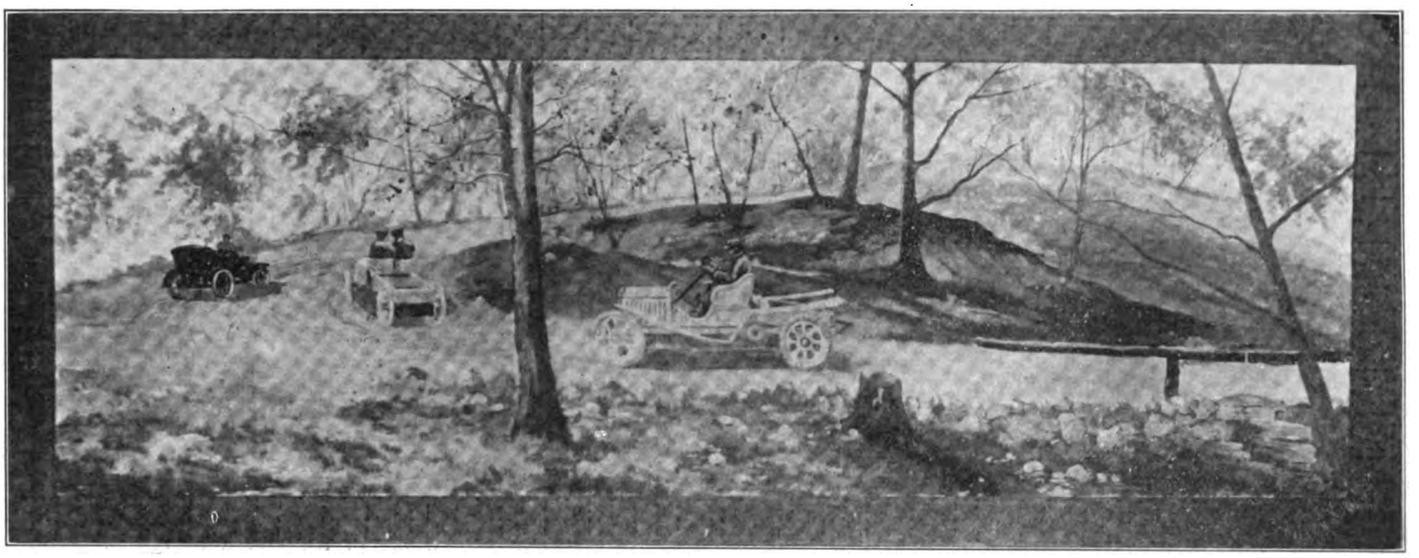
Not the least significant and interesting demonstration of automobile bigness in connection with the Chicago Show is the shipment of show cars from the Madison Square Garden that is now making its way westward to the Windy City exhibition in two long train loads, each train consisting of thirty freight cars and each car containing from two to four automobiles. This is said to be the largest automobile shipment ever made, and, in fact, the largest shipment of any one manufactured product to be transported at one time over one railroad route.

All of the arrangements for loading and forwarding the machines were made by the traffic department of the Association of Licensed Automobile Manufacturers, and the facilities which were offered made it possible to load the entire lot of automobiles in six hours after the close of the Madison Square Garden show, without a single case of damage. Upon arriving at Chicago the two trains will be switched to different



ARTISTS PREPARING DECORATIVE SCENES FOR THE CHICAGO SHOW

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ONE OF MARATTA'S SYMBOLIC PANELS AT THE CHICAGO SHOW

points with a view to avoiding congestion and minimizing the possibility of damage through overcrowding, thus facilitating the work of unloading. In the past it has been difficult for automobile manufacturers to get suitable cars in which to ship their machines, the ordinary box cars offered by the railroad being fitted with small, inconvenient side doors. For the shipment of cars to Chicago, the traffic department secured special wide-door cars so arranged inside that the machines could be well packed and secured against slipping or bumping.

Baltimore Show Opens Tamely.

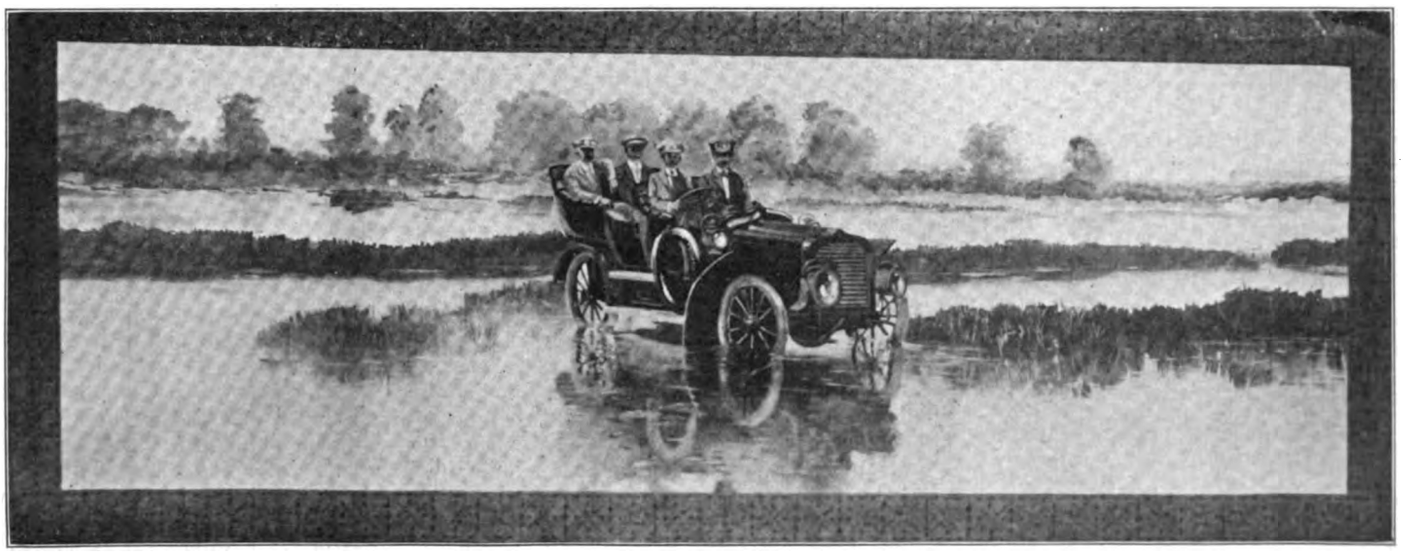
Opening night at Baltimore's third annual show, Saturday, 16th inst., was robbed of some of its interest by the same cause that made the Philadelphia exhibition not quite as auspicious as it might have been. The Philadelphia show overlapped the New York show and the Baltimore affair trod on the heels of the Quaker City display, opening on the night the Philadelphia show came to an end. As a result many of the exhibits were not in place when the doors of the hall opened.

Baltimore has no public exhibition hall large enough for the purpose so the show is staged in the garage of the Motorcar company, at Maryland and Mount Royal avenues. The garage was profusely decorated with bunting and flags.

One of the prominent cars missing is the Matheson. There was insufficient room at the garage exhibition hall, so Palmer & Singer, New York agents for the car, are holding an exhibition of their own in the Hotel Belvedere, in the tea room to be exact. Among the exhibitors showing cars are the following: Baltimore Motor Carriage Co., Winton. Callahan,Atkinson & Co., Locomobile. Hamilton Auto Co., Stoddard-Dayton. Lambert Automobile Co., Maxwell. Shaffer Mfg. Co., Pullman. Snowdeal Auto Co., Marmon. French & McCormick, Oldsmobile. J. L. B. Wilhide, Atlas and Kisselkar. Mar-Del Co., Franklin, Packard, Elmore, Buick and Pope-Waverly. Motor Car Co., Peerless. Mount Vernon Motor Co., Autocar. Maryland Motor Car Co., Maryland. White Agency, White steam cars. Southern Automobile Co., Pierce Arrow. Auto Storage & Supply Co., National and Lambert. W. D. Gill, Royal Tourist.

Where Owner's Liability Ceases.

That an owner of an automobile cannot be held liable for damages caused by his car when it is in charge of a chauffeur without the owner's permission is the decision of the State Superior Court in reversing a decision of the Philadelphia Common Pleas Court. The case was decided on the appeal of an owner of a car which killed a child while being driven by an employee who had taken several of his friends for a ride in opposition to the wishes of the owner.



ANOTHER OF MARATTA'S CREATIONS OF THE AUTOMOBILE IN ART

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CONVERTIBLE QUALITY OF ENERGY

How It Appears in the Operation of the Automobile—Effect of Temperature Range on Efficiency.

Energy is a term which is constantly coming up in discussions regarding any sort of mechanism, and one which is more or less apt to be misunderstood because of its close relationship to motion and power, which, in a way, may be termed its visible manifestations. The distinction is apparently a fine one, speaking from the non-technical point of view. Nevertheless, it is important to bear it in mind continually in order to appreciate the theory of action of any mechanical device in a thoroughly clear and intelligent manner. On this account, the following elementary presentation of the distinguishment between energy and the primary forces of heat and motion, is valuable because of its simplicity and pointedness. The writer, a foreign expert, also lets fall some light on the much vexed question of the efficiency of the gas engine.

"The word energy is one which is constantly in use, and is most commonly used in connection with some mechanical appliances," he remarks. "Thus if one sees a revolving flywheel, a conception of the energy stored in it is entertained by the difficulty which would be experienced in stopping the wheel. This, in fact, forms a true conception of the energy stored in the wheel, for the work done in this way is a measure of the stored energy. This, however, is only one form of energy; there are, of course, others, such as chemical, thermal, electrical, etc., and the amount of energy stored in any one of these forms can be expressed in terms of any one of the others.

"An example of heat energy being stored chemically is found in ordinary lime, for if water be added to it and the lime be slaked a considerable amount of heat is evolved. This heat was stored in the lime and water in some particular molecular form as chemical energy, and by converting the lime into slaked lime the amount of heat equivalent to the amount of chemically stored energy was liberated. If now we can conceive the slaked lime being converted back into lime and water again heat would have to be taken in by the lime in order to store up the necessary chemical energy. This essential heat for the process would be taken from the containing vessel, and thus leave it (the vessel) and the surrounding objects at a lower temperature.

* * * * *

"During the formation of petrol from its elements heat must be absorbed, and is stored up in the petrol as chemical energy, for in converting one gallon of petrol with a suitable quantity of air into so much soot and waste gases by burning it sufficient heat is given out to raise 140 gallons of water at 60 degrees Fahr. to boiling point.

"Suppose two equal quantities of petrol be taken and one portion be burnt in a suitable burner, and all the heat so evolved be measured. Suppose also the other equal portion be utilized in driving a petrol motor under load, and all the heat proceeding from the motor be carefully measured. Then it would be, and has been, noticed that more heat is obtained from the burner than from the motor. The reason for this is that upon the instantaneous ignition of the fuel in each case exactly the same amount of heat is evolved; but in the case of the motor some heat entirely disappears, being converted into work, this being an instance of the convertibility of the different forms of energy referred to previously.

"A very good idea of the amount of heat equivalent to a certain amount of mechanical work done is obtained by rubbing together, say, two flat pieces of wood. The heat so evolved is an exact equivalent of the work done by rubbing. It must be borne in mind that the work done by rubbing and the heat so evolved are convertible. That is to say that if an amount of heat equal to that generated by friction were given, then it would be possible with a perfect heat engine to do just the same amount of work as was done in the first place by rubbing.

"If it be considered how much work would have to be done by rubbing two surfaces together to produce as much heat as proceeds from the exhaust of, and by radiation from, a petrol motor an idea is gained as to how much more mechanical work a motor would do if absolutely thermally perfect. In such an engine the exhaust gases, having been robbed of all their heat energy and converted into work, would be cold, and the fuel consumption per unit of work would be correspondingly decreased. Such considerations are embraced in the science of thermodynamics, and it can be shown that the possible thermal efficiency increases as the difference in temperature of the explosion and the exhaust gases increases. It should be remembered, however, that the thermal efficiency would not be increased by cooling the exhaust gases with a water jacket. The difference in temperature referred to must be produced by the expansion of the gases, and the only way in which the temperature of the exhaust gases may be decreased with a view of increasing the thermal efficiency is by allowing the gases to expand further while pushing the piston.

"From this it is seen that the higher the temperature of the explosion (while the temperature of the exhaust gases remains constant) the greater is the possible thermal efficiency, which is limited by mechanical and chemical properties of the engine parts and lubricants.

"Now, in the case of a car, that heat which is converted into work pushes the piston along, which motion is eventually used to turn the wheels of the car, and it is interesting to enquire what becomes of all this mechanical work, which is given to the piston. First of all, a certain quantity of the mechanical work is required to overcome the friction of the moving parts of the mechanism of the car, and this so used work is once more directly converted into heat. The work transmitted to the driving wheels which propels the car (along a level road) is also entirely used in overcoming the frictional resistances of the road and air, and consequently this work must also be converted into heat. Thus it is seen that the heat abstracted and stored up during the natural formation of petrol at some remote period is reproduced by the running of a motor, and is used in heating the earth and the air, either by friction or conduction from the hot exhaust gases. It should be further noted that the conversion of the whole of the stored energy in petrol into heat, when running a car, does not depend upon the thermal inefficiency of the petrol motor. If the motor had a thermal efficiency of 100 per cent., and the exhaust gases were cold, the stored up energy in the petrol would still be reproduced as heat, because the whole of the work done by an engine in driving a car (along a level road) is dissipated in overcoming frictional resistance, giving rise to an equivalent amount of heat."

New Form of Spring Shackle Finds Favor.

One of the little detailed alterations which is observable on a number of cars this year, and which, though of small apparent value, yet may be at times of considerable importance, is the use of the new form of spring shackle which in addition to the two bosses and side pieces necessary to its action, carries also a bar connecting the two sides, and so placed as to prevent the member from being reversed, thus permitting the spring to come into a position below instead of above the dumb iron. In the past, considerable trouble has frequently been experienced owing to the tendency of weakened springs to reverse their shackles in this way, This condition naturally tending to warp the frame slightly, threw several sorts of unnatural stress upon it and was apt to strain it, in addition to forboding the breaking of the shackle if not the spring itself, if not quickly observed and pried over into its proper position.

To Prevent Bonnet from Rattling.

When a two-piece bonnet of the Continental type gives offense by rattling continuously and persistently, a simple method of checking the sound and a large part of the motion which causes it as well, is to place a stout leather thong or belt lace between it and its supporting flanges on radiator and dash. To this end the flanges may be drilled at regular intervals with small holes, not large enough to weaken the metal, while the thong is simply laced through them, alternately over and under, the ends being firmly secured.

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TEST OF THE SIX CYCLE ENGINE

Two Extra Strokes Designed for Scavenging Purposes Appear Worth While—The Results Deduced.

It is well known that many of the shortcomings of the common type of four-cycle motor are due to the dilution of unburnt gases with a portion of residue left over from the previous explosion. Some effectual method of scavenging the cylinder, has been sought on this account, but without avail up to the present time, because all such efforts, however successful, thermally speaking, have involved more or less mechanical complexity which the increased economy has not been sufficient to repay. In connection with these attempts, the proposition of employing an extension of the Otto cycle in the form of a six stroke cycle, the two extra strokes serving merely to induct and expel pure air, has been broached more than once. It has become well known that such a system would result in increased economy of performance in several ways. but broad and general data on the subject, and covering the results of authentic tests, has been lacking, although such tests are known to have been carried out more or less completely.

On this account the results of certain experiments conducted at the University of Birmingham (England) by Professor Burstall, and covering the performance of an engine of the "six-cycle type," recently designed by Arthur Rollaston, are particularly interesting. Briefly speaking, this motor, which is practically identical with the ordinary four-cycle motor except for the addition of a scavenging valve, developed about the same ratio of power to weight as the ordinary type of motor, notwithstanding its slightly heavier construction, and showed on certain tests, as much as one third increase in power over what would be expected from its bore, according to the Automobile Club formula, which is the same as that employed by the Association of Licensed Automobile Manufacturers, in this country. In efficiency, it developed a very decided improvement over the ordinary type of automobile motor.

The motor under test, which measured 5 by 5¼ inches, bore and stroke, and was of three-cylinder construction, had its inlet valve, placed in the center of the head, the exhaust being located in a pocket at one side, and working from a direct cam lifter in the ordinary way. The scavenging valve, was placed directly over the exhaust valve, and in the position frequently used for the inlet of the ordinary motor.

Theoretically, the air in the valve chamber does not mix with the explosive charge in the cylinder when it is first admitted. Consequently, at the beginning of the explosion, the air contents absorb a certain amount of heat from the main body of the charge, which they later give out. In this way, it is claimed, the maximum pressure of the explosion is reduced, while the mean pressure throughout the stroke is increased. By the same token, the mean temperature of the explosion stroke is reduced to a certain extent, while the maximum temperature is considerably lowered. Still another point which is of considerable value to the motor from the mechanical standpoint, is that the scavenging charge, being taken in directly over the exhaust valve, cools that member very effectually, thus prolonging its life. The cycle is precisely that of the Otto engine except that at the end of the exhaust stroke a charge of pure air is inducted through the scavenging valve, and again expelled on the succeeding stroke through the exhaust, the cylinder being thoroughly cooled and washed clear of the residue of the former explosion before the new charge is inducted.

The advantages claimed for the arrangement are: First, the certainty of absolute and complete combustion of the charge, whether it be up to full cylinder capacity, or closely throttled. This is not possible of attainment with the ordinary type of motor for the reason that as the charge is throttled, the ratio between the live gas of the new charge and the dead residue left over from the last explosion, is increased, the increase of this "coefficient of dilution" rendering combustion less and less perfect as the quantity of the fresh charge is diminished, even though its quality be weakened proportionately. Second, the extra strokes serve the purpose of cooling the cylinder to such a degree that it is claimed no overheating can take place with a motor of ordinary design, even though run at full load for a great length of time. Backfiring also is prevented, because of the low cylinder temperature encountered by the incoming charge, as a result of which, also it is possible to run the compression pressure to a much higher point than is possible ordinarily and without risk of preignition. Third, by the insurance of complete combustion under all conditions, the exhaust is clarified to such a degree that it is rendered practically odorless and innocuous, a point which under certain circumstances, is of considerable value.

Indicator diagrams taken during the test show clearly that the cycle obtained is an improvement over that of the ordinary motor. The typical card shows a mean effective pressure of 75 pounds, and an indicated horsepower of 17.1 at 800 revolutions per minute, the brake horsepower at this rate being no less than 14.1. The tests were carried out at speeds ranging from 450 to 1,080 revolutions per minute, the runs being of long duration in every case.

"At full load at speeds varying from 300 to 1,000 revolutions per minute, the consumption of petrol was 0.54 lb. per i. h. p. hour and 0.66 lb. per b. h. p. hour The thermal efficiency of the engine per i. h. p. was 25 per cent., while the heat to water jacket was 30.7 per cent., and to exhaust 44.3 per cent." says the Autocar, in reference to the tests. "The analysis of the exhaust gases gave carbon-dioxide 6.3 per cent., oxygen 8.7 per cent., and the exhaust contained no carbon-monoxide or hydrogen, and was also clear and odorless.

"The compression of the engine was 75 pounds per square inch, and the mean pressure shown on the indicator cards was 90 pounds per square inch. The mechanical efficiency was 82.5 per cent., which must be considered a very good performance for a six-stroke engine. At all speeds and powers during the trials, the engine worked without overheating or any other trouble, and with an exhaust without the least suspicion of color or smell. When using hydro-carbon fuels, the six-stroke engine is found to be practically equal in power to a four-stroke engine at the same speed. This is due to the replacing of the hot products in the clearance by comparatively cold air, and to the cooling down of the cylinder, which allows of a greater weight of the combustible gas being taken in, this being approximately 33 per cent. more per charge than usual. This large charge of combustible gas can be burnt completely, owing to the products of combustion being replaced by air.

"Owing to the cooling action of the scavenging air on the walls, piston, and valves, to the time between the explosions being increased, and to the lower temperature of the explosions, the temperature of the cylinder walls, pistons, and valves is considerably lower than in non-scavenging engines. As a consequence the lubricating oil does not become burnt and form deposits of carbon on the piston, valves, and sparking plugs. A less quantity of lubricating oil is required in working. The lower temperatures of the scavenging engine preventing deposits of carbonized oil in the cylinder, combined with the low temperature of combustion and the absence of shocks and strains to the engine parts, enable these engines to run for long periods without cleaning or attention, and with little wear of the working parts."

Further results of the trials are given in the following table:

	Referred to brake h. p.	Referred to indicated h. p.
Petrol, per b.h.p.....	0.66 lb.	0.54 lb.
Revolutions per minute	717	
Thermal efficiency on brake	20.5%	25%
Percentage of heat of fuel rejected to jacket water	37.2%	30%
Heat to exhaust	42.3%	45%
Composition of exhaust gases—		
Carbon-dioxide	6.3%	
Oxygen	8.7%	

An interesting comparison with these results is furnished by the results of tests carried out on a four-cylinder automobile motor of standard construction early in the year, by Professor Hopkinson, of Cam-

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bridge University, in which the best results obtained at 1,000 revolutions per minute, gave for consumption referred to brake horsepower, 0.75 pounds, and referred to indicated horsepower, 0.60 pounds. The thermal efficiency referred to brake horsepower was, in this instance, 19.3 per cent., and referred to indicated horsepower, 24.2 per cent. The motor in question was a veritcal machine of the four-cylinder pattern, with 3½ by 5⅓-inch cylinders, and developed a maximum horsepower of 17½ at 1,000 turns of its shaft.

Guard for the Bar Sprag.

While the simple type of bar sprag is not perfectly well adapted to the purposes of ordinary touring car, still because of the simplicity of its application to existing machines, as well as its low first cost, there are times when it is preferable to any other style. In commercial vehicles, of course, it is always to be preferred to any devices which are applied to the sprockets or driving gear because it is not dependent on the condition of any other portion of the mechanism, such as the chains and sprockets. Wherever it is employed, however, and particularly in connection with heavy vehicles, it should be guarded by means of a stout chain linking it to the chassis in such a way that it cannot be reversed in case it finds a footing in soft earth. The chain should be of sufficient length to permit the sprag to bite into the roadway two or three inches, or up to the collar which usually surrounds the toe, but no further, and it should be independent of the chain or cable by which it is to be drawn up when out of use.

Care of Selective Gears.

In cars employing the selective method of gear changing, it is very essential that the telescoping shafts of the brake and gear mechanisms be kept clean and well lubricated at all times. The gear rocker shaft in particular, on account of its rotative and longitudinal motions, tends to accumulate sand and dust from the road, and transfer it gradually through the entire length of the shaft, and into the gear box, if that enclosure happens to be in direct communication with it. On this account the external portion of the shaft should be kept as free from oil as possible and carefully cleaned whenever the machine has been exposed to muddy roads. Lubrication should be provided only through the regular oilers, but at frequent intervals, care being taken not to use an excess of oil in any case.

To Keep Metal Steps from Rusting.

Metal steps and running boards, if wiped off with a rag dipped in kerosene whenever the car is washed, are not likely to rust, and always look tidy and neat. Further than this, it is well to touch up the worn treads with asphaltum paint occasionally, in order to protect the metal and prevent it from looking old and worn.

MOTORCYCLISTS WHO COME HIGH

Being a Story with an Obvious Moral, Which Led to the Police Court and a $25 Fine.

Even the victim of the joke laughs at it, and it is a good one, at the expense of a well known business man in Newark, N. J., who owns and drives a high powered automobile. He was driving along Central avenue a few days ago with another young man as his companion. Keeping well within the speed limit they were overtaken by a man and a woman on a motorcycle "built for two." The latter passed them, dropped back, and then circled them. Nothing was said, but the motorcyclists seemed to be enjoying immensely the fact that the big machine dared not let out its speed and that their little one could run all about it and chug-chug with delight, besides sending out an occasional snort of disdain or defiance.

For a few minutes the automobilists stood the teasing, but then the man at the wheel bristled up, pulled a lever sharply and let out a few notches of speed and in less time than is consumed in telling the story sent his powerful machine away from the little motorcycle, leaving the latter a couple of blocks behind. Believing himself rid of the annoyance, the automobilist slowed down. A block further on he passed and saluted a motorcycle cop who was resting at the curb.

The cop mounted his machine after the automobile had passed, and started along in the same direction. Hearing the motorcycle the automobilist remarked to his friend, "Here come that man and woman again to have fun with us, but I'll fool them." Then he opened up again and went ahead at a 20-mile clip. Instead of losing the motorcycle, however, the little machine seemed to be gaining, and the speed of the automobile was increased.

It was at this point that the friend looked back, the first time that either occupant of the automobile had thought of so doing. "Pull her down! It's a cop!" he yelled. But the man at the wheel didn't understand and kept up the high speed. "Stop; it's a cop!" his friend excitedly shouted in his ear. He didn't understand even then, but he looked around to see what the trouble was and saw the motorcycle policeman, who was then abreast of his machine. In an instant he slowed down and stopped. An explanation was made, but the policeman courteously insisted upon making an arrest. When the police station was reached the story was told again and all hands enjoyed a good laugh, but the automobilist had to put up $100 for his future appearance. Later the story of how the automobilist unwittingly raced with a policeman was repeated before Judge Herr, but there was no denial of the speed law having been violated, and the magistrate imposed a fine of $25.

"Those motorcycles, when driven by any one who likes to show his contempt for an automobile and to impress upon automobilists that the little snorters can go as fast as the big machines, and who do not hesitate to do it in an offensive way, are a great annoyance," said the automobilist later. "They will goad almost any man with red blood in his veins into taking a chance by letting out a few speed notches in order to get away, but the next time I do it I'll make sure that the motorcyclist is not a cop. The one who arrested me is a good fellow and did only his duty under the circumstances. He was as much astonished at my trying to run away from him as I was at his chasing me. There was no reason for me to attempt to race away from him, because we had just spoken to each other, and I knew that was not the time or place to put on speed. I did it merely to get away from the man and woman whom I believed were coming up behind again to have fun with me."

Fuldner Re-elected by Milwaukee Club.

Dr. Louis Fuldner was re-elected president of the Milwaukee Automobile Club at the annual meeting last week. Other officers chosen were: First vice-president, Emil Schandlein; second vice-president, J. C. Baird; secretary-treasurer, James T. Drought. The annual report showed a membership of 200, and a cash balance in the treasury of $500. During the past year the club paid out over $3,000 for good roads and in working for favorable legislation.

Automobiles for Detective Service.

Automobile service for fire or burglary dispatch is the latest innovation of a Milwaukee detective agency, who have just purchased three Rambler automobiles, to be placed at the disposition of patrons in cases of fire, burglary, or to attend to unlocked vaults. The service will be in force between 6 p. m. and 6 a. m. and will be free to subscribers. Automobiles also will be provided to convey patrons to night or early morning trains or for doctor calls.

St. Paul Club Elects Officers.

At the annual meeting of the St. Paul (Minn.) Automobile Club the following officers were elected for the ensuing year: President, Reuben Warner; vice-president, R. M. Neely; secretary, H. S. Johnsona; treasurer, W. O. Washburn; directors, Oscar L. Taylor, F. B. Lynch, T. W. Ingersoll, and W. R. Edwards The club has a little more than $2,000 in the treasury and the membership numbers 140.

A two-mile automobile track is to be built at Venice, a Los Angeles (Cal.) resort. A club house and garage also are planned and the promoters expect to hold meets as often as advisable. The course will be ready for use about January 25th, it is stated.

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MANY STRANGE CAUSES OF FIRE

Elements that Contribute to the Expense of Insurance—How Risks Might be Lessened and Premiums Lowered.

Automobile manufacturers and garage proprietors are not alone in feeling the burden of high fire insurance rates, as the carriage industry has much the same thing to contend with, but the carriage manufacturers are giving the question of insurance rates some close study and their investigations both into the fiscal side and into the causes for fires are of direct concern to the automobile trade because of the similarity of the risks. Seemingly strange are some of the causes for conflagrations according to the report of the insurance committee of the Carriage Builders' National Association, and yet many of these causes are said to be much more common than is generally supposed. The committee has been charged with the duty of giving the matter of fire risks and rates careful investigation and rendered its report to the carriage builders at their last annual convention, recently held in New York. In discussing fire causes and the question of insurance rates, the report has the following to say:

"When we realize that on an average over $160,000,000 is destroyed by fire in the United States every year, we will see we are facing one of the most important questions that can come before us. It makes us realize that it is necessary to investigate the causes of fire and to seek to reduce the fire loss as far as possible.

"Sixty per cent. of all the fires that occur start from preventible causes. Part of this loss is caused by ignorance, and an education along the line of fire prevention will help. A great part of this loss is caused by rank carelessness, and the results of such carelessness should be published in such a way that the careless individuals will be more careful.

"Even when we are most positive in our own minds that we have our property in such shape that no fire can possibly start, we would do well to stop to realize some of the hundreds of ways in which a fire might start outside of human agency—to say nothing of the danger from personal enemies, or those people who, without any animosity whatever, have been known to set fire to buildings simply for the purpose of seeing the excitement. We had the latter case illustrated at Indianapolis within the last eighteen months in the plant of E. C. Atkins Co., one of the largest saw manufacturers in the world. Two small boys set fire to some material in the department in which they were working, and while the blaze was extinguished without much loss, the boys repeated the act on three different occasions before they were discovered.

"But leaving human agency aside, it would be very profitable to glance at some causes from which fires originate: Cotton waste or other material for spontaneous combustion thrown into a corner; ashes recklessly knocked from a pipe or cigar; the stump of a burnt match thrown into combustible material; an overheated stove; a neglected furnace room; matches left for rats or mice to drag between the floor and ceiling; old clothes — especially painters' clothes — thrown down into a pile on the floor, or left near a stove; a watchman's broken lantern, or any one of many other causes too numerous to enumerate.

"Lightning causes much more loss in the country than it does in the cities. Brick platforms under forges, or stoves, are not safe, unless the wooden floor beneath is protected with zinc because live coals sometimes sift down between the bricks.

"Most men are careless of the necessity of keeping matches in tin or stone jars to prevent being ignited by rats, mice or even cockroaches. A most remarkable incident is given by an agent at Jacksonville, Fla., who made the report that while his family was absent from the city he went to his house at noon, and when he was in one of the rooms he heard a noise behind him, and turning, saw a box of matches which had been ignited by the gnawing of a cockroach—one of the largest he had ever seen —which, frightened by the fire, was running down the leg of the table on which the box of matches stood. Here is an instance, capable of proof by an intelligent man, of a danger at which most people would laugh as being improbable.

"The Journal of Commerce and Commercial Bulletin, New York, gives the following clipping: 'A great deal has been said about mice starting fires, but it is seldom that positive proof of the assertion can be found. This week Fred Wedigen, a Williamsport, Pa., agent, received from a grocer a box which showed just how such fires are started. In this instance, one-half of the matches were gone and the remains were used in building a nest for the mice. Two young mice, probably as many days old, were found in the nest. The mice gnawed the wood of the match until it resembled excelsior. All but the heads of the matches were used. The heads were carefully piled away in one corner of the box under the nest. It is when the mouse gnaws too close to the head that fire is started. Instantly one is ignited the shavings in the box blaze up, and sometimes serious conflagrations result.' We would most heartily recommend the use of safety matches as a means of preventing loss from this source.

"Working over hours causes many fires, through the sleepy indifference of tired workmen, especially where the overtime work is only for a few hours, as, in the hurry to get home, they are liable to leave without taking proper precautions to see that there are no hot journals, etc. It is a grave question whether all-night work is not less hazardous than half-night work. Where employees work half the night to make up time, and go home tired out, they too frequently fail to examine journals and put out smouldering fires, which blaze up after they leave, when there is no one to extinguish them.

"Oily waste is often the cause of fire in shops running machinery where it is used to wipe off the machines, and afterwards carelessly thrown aside in some closet or rubbish heap.

"It will be understood also, that heat results from almost every operation of force —the friction of machinery, the turning of iron in a lathe, the cutting of threads on a bolt, the driving of a nail into wood, and especially into hardwood, the electricity generated by a rapidly moving belt, and a hundred or more operations that are familiar to mechanics.

"Long and costly experience has taught the fire insurance inspector to be on the constant look-out for untidiness in a risk —carelessness as to rubbish, waste, ashes, and other accumulations which are dangerous. It is safe to assume that there is no such thing as 'clean waste,' and that all accumulations of rubbish are objectionable, because they almost invariably contain self-igniting substances, or become the resting places for cast away cigarettes, cigars or half-burnt matches. The insurance inspectors work on the basis that it is always best to decline a 'dirty risk.'

"The best receptacles for waste are large iron cans or legs lifting them from the floor, and with hinged metal covers, whose contents might burn out without igniting the premises, and they should be emptied each night, their contents being burned under the boilers before closing hours, or removed from the premises to a safe distance.

"It is in the majority of cases a most profitable investment to have a well-constructed building made of brick, with fire doors, fire walls, elevator shafts cut off from the main building, lighted by electricity, and heated by steam. But, above all, as a rate saver, the automatic sprinkler is certainly the best. While automatic sprinklers are very expensive in the initial cost, yet after being installed they make a saving, not simply for the time being, but on the premiums paid year after year, and are a most profitable investment.

"The average business man would not think of making an ordinary contract without first reading the terms of the contract, and yet when he takes out fire insurance on thousands of dollars worth of property, he is just as apt as not to take the policy (which is the contract) and put it away without even looking at the terms of it. It is well to know that, if property stands on leased ground, this must be stated in the policy, or the insurance will be void. A personal friend of the writer's lost almost all of the money he had just from this one point. It is necessary to inform the insurance company, if there is any other insur-

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ance on the property, or if mechanics are employed in altering the building for more than fifteen days at any one time, or if any change takes place in the title to the property, or if the property becomes vacant. The company will not be liable on account of neglect of the insured to use all reasonable means to save and preserve the property at and after a fire, or when the property is in danger of fire, nor by explosion of any kind unless fire ensues, and then for the damage of fire only.

"The past year has seen a continued increase in the number and in the strength of the mutual fire insurance companies, especially those that carry factory risks. When we realize that it costs the 'Old Line' companies as high as 50 per cent. of the premium simply to get the business and put it on the books, and without any account being taken of the loss expense, it becomes evident that there is a large field for a mutual campany which has no agents at all, and which has no high-salaried officers. The stock company is organized primarily to make money for its stockholders, while the mutual company is organized primarily to make money for its policy holders.

"As the stock companies have formed rate associations all over the country, there is no competition between them, and consequently there is no hope for any cheaper rates from them. The mutual companies are the only sources of relief that the insured has, and for that reason they have been filling a most important place in the fire insurance world.

His Dictionary Didn't Save Him.

Neither the oratory of his eloquent counsel, his dictionaries and other exhibits in the case, nor the extreme delicacy of the novel contention raised, saved Edward F. Davenport, of Cambridge, from being fined $10 by Judge Kelley in the Hingham (Mass.) court, on the charge of overspeeding at "the intersection of public ways," as the complaint put it. Some time ago Davenport was haled into court on the dual charge of rounding a curve too fast and also for overspeeding at the intersection of East Kilby and Summer streets. He was acquitted on the "curve" allegation, and because of the technicalities raised relative to the other complaint the hearing of that phase was postponed. Although dictionaries, geometries and other text books were produced and an argument lasting several hours resulted over the word "intersection," the judge found the motorist guilty. Davenport promptly took an appeal against this judgment.

An Owl to Do His Honking.

Stephen Cass has just brought the first motor car into Haskell county, Kansas. That fact is not startling, but the Kansas City Star states that Cass has a trained screech owl that he will perch on the dash and use instead of the "usual honk-horn." Accessory manufacturers take notice.

PROGRESS TYPIFIED IN PARADE

Horses as Guests on Big Electric Trucks—Their Drays Dragged Along as Idle Trailers.

As a bit of picturesque symbolism relating to the horse and the self-propelled vehicle, three big electric trucks, made by the Studebaker Co., paraded down Broadway, one afternoon last week, from Forty-eighth street to the Battery, giving New Yorkers something of a shock by carrying great truck horses as their load and hauling in the rear the drays such as the horses pull. Just why big, healthy draught horses should be toted around in automobiles in the manner shown by the accompanying illustration was something of a puzzler for the crowds at first, until the point dawned on them and then there was many an appreciative grin. The horses themselves did not relish the joke and one of them registered his protest against so public an intimation of his passing usefulness by kicking the side pieces off the automobile that was carrying him. At the conclusion of their parade the electrics were delivered to the H. B. Claflin Co., making a total of six now in use by that concern. Each vehicle weighs 8,400 pounds and has a capacity of three and one-half tons, with a maximum speed of seven miles per hour.



CELEBRATING THE VICTORY OVER THE HORSE

Swiss Antipathy to Automobiles.

The Canton of the Grisons is the only part of Switzerland where automobiles are under an official ban, according to a foreign correspondent of the Sun. The Federal Council, it is true, resolved a while ago, he states, to open certain roads through the canton to automobile traffic, but public opinion took a determined stand against this decision. Thousands of signatures were collected to a hostile manifesto demanding a referendum on the matter, with the result that the Federal Council's proposal has been upset by 10,000 votes against 2,000 who declared in favor of admitting motor cars on certain specified routes.

Apart from this local instance of open public hostility against automobiles there can be no doubt, judging by the personal experiences of many American motorists during the past season, that a feeling of marked antipathy exists against them in official circles in every canton of the republic. Vexatious restrictions and annoyances, amounting in most cases to nothing less than official blackmail, are to be met at every turn. It is a common experience on passing through a village to be peremptorily held up by the local gendarme, who accuses the uphappy motorist of driving at a greater speed than say ten miles an hour, or of having run over some domestic animal in the last village.

Polite assurances to the contrary and angry protests are alike of no avail; the traveler is ordered to go back at once or pay a fine that may be anything from $5 to $25 on the spot, when he is allowed to proceed on his way. Knowing that complaints to superior officials will be met with cold disdain, most tourists prefer to pay the fine and thus save themselves time and further bother and expense. One American alone touring through Switzerland last summer was victimized in this way to the extent of $1,200 in fines inflicted on baseless charges of scorching or other imaginary infringements of the local regulations.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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REFINEMENT IN COLOR SCHEMES

Abnormal Hues Giving Place to Rich, Warm Tints—Sugestions for Some Attractive Combinations.

Until such time as automobile owners and users no longer scoff at speed limitations, and cease to defy the established laws of safety, we may expect the wide-spread prevalence of color monstrosities, says M. C. Hillick, in the Carriage Monthly. As a matter of evidence, introduced to sustain their case in the court of public opinion, certain courageous captains of the automobile industry have said, recently, that "under the existing reign of speed mania, the course of safety is best served by painting the horseless vehicle in abnormal colors or combinations of colors."

How much or how little this contention is supported by actual facts is a conclusion left for the reader to reach through the medium of his own personal experience and observation. Suffice it to say—and we are pleased to be able to say it—that the majority of automobiles painted during the past two years have conformed closer to the standard of the trained colorist than the average man is aware of. Of the wide range of colors used, red finds largest display. The term red is, in a sense, an exceedingly broad one, and covers a multitude of favorites, chief among which has been, is now, and promises to long continue to be, maroon. Maroon fills the eye, entices the beholder, thrills the spirit, and under an imperial structure of varnish, displays an unsurpassed luxury of color effects. Other greatly used reds comprise automobile vermilion, a first cousin to English red, with the flush of the sunset pervading it, Aurora red, Rubens red, Mohawk red, deep, French carmine, coach painters' red, coaching red and English vermilion, deep shade. Interspersed between the lights and shadows of these reds are a great number of other reds, more or less admired, and all having a glow and warmth immensely attractive without respect to seasons.

In choice of greens, criticism may be directed, and, we believe, rightly directed, to the lack of relief given these colors upon the surface. The most glorious green the mind may suggest has little capacity for making the most of itself unless given a touch of contrast in association with some other color. For the past two years automobile green, and such other greens as somewhat approximate it in intensity of effect, have chiefly prevailed upon the pleasure automobile. The greens are invariably popular from the fact that they carry the one touch of aristocracy that unites all men in a common admiration of their fourfold graces. Until recently, however, the design of the automobile, speaking in general terms, has not invited the extended use of the dark, rich greens which for more than a decade have met with practically universal acceptance in the practice of carriage painting.

The blues have been widely used, and no less widely abused, during the past 24 months, and prior to that time, upon automobile surfaces.

If a standard was ever contemplated for the prudent guidance of painters in the employment of blue pigments upon the automobile, it has been wholly lost sight of. One of the best-known carriage and automobile painters in New York has admitted to the writer that the family of blue colors has suffered more at the hands of painters who have permitted themselves to be influenced by the clamor of a rebellions public than any class of colors, which admission, by the way, is in itself a sad commentary on the intrusive propensity of an ill-advised following of people.

Automobile blue, a deep, fine blue, fully possessed of the witchery of color, has, of course, led all other members of the blue family in point of popularity. Following has come Richelieu blue, azure and perfect blue, cobalt and ultramarine blue, along with an almost startling variety of modifications from these, running all the way from the now famous Alice blue to the deep-toned, changeable Prussian blue, which to the layman may appear blue or black, as the point of view may disclose. Automobile owners, especially those of the fair sex, have been moved to take liberties with the blue colors to a degree unheard of in the use of most other colors.

That the painters, as a rule, have obeyed their instructions is manifest from the surfaces of blue, which, by the standard of the trained colorist, must pass as actual color deformities. Moreover, the determination of no small number of automobile owners and users to set up an individual scheme of colors for the horseless carriage, to the end that each owner may flaunt an exclusive color upon his machine distinctly unlike that of any other, is responsible for many of the uncouth and unassertive blue pigments worn by the automobile. A society woman of note who braves the scorn of painters, and makes pretense of inventing her own automobile colors, naively declares "it is so easy to dabble in blues!"

Much as we may decry the illogical, incongruous and inartistic choice of colors so widely displayed upon a certain class of automobiles, particularly of the runabout order, we must concede that by virtue of numerous characteristics which even the most consummate designer and builder may scarce hope to eliminate, the precise art of painting applied to the horse-drawn carriage can in no wise find adaptation upon the automobile.

First of all, perhaps, the automobile should be painted in a raiment to promote cheerfulness, and to dispel the gloom sometimes pervading the horse-drawn vehicle dressed in its solemn-visaged pigments. But brightness of raiment and cheerfulness of color perspective should not be associated with sensational effects. Between the sombre effects reduced to a fine art upon the stately brougham or landau, and the lurid colors cast lavishly upon the automobile, is a happy medium to attain, which the automobile builder and the automobile-using public should be moved to unite. A simple elimination of those colors and combination of colors which tend to convert the automobile into a "freak" conveyance will speedily put the painting of the motor car upon an art basis of unchallenged merit. Contributory to this must come, and, in point of fact, is fast coming a quality of surfacing and finish strictly in keeping with the grade of such work applied to the horse-drawn carriage. A new favorite in the family of red pigments, or, rather, what is destined to be a favorite, is Washington red. Washington red possesses the charm of maroon and the brilliancy of carmine. It may be used effectively with the deep shade for the seat panels, medium shade for the lower panels, and the light shade for the chassis. A novelty in this style of locating the three shades of Washington red, which, we may say in passing, is obtained by the use of glazing effects, is worked out by drawing 1-inch stripes of cadmium-toned orange, at a distance of 3 inches apart, vertically through the lower panels, and glazing with No. 40 carmine. The color effects thus obtained are original and decidedly smart.

Graduated striping effects, vivid, without the touch of sensationalism, are to be had over this red by drawing a ½-inch line of Tuscan red and edging this on either side with deep orange chrome to the width of ¼ inch. Then glaze with carmine. Make the stripes vertical and 2 inches apart.

Another combination consists of upper panels of jet black, lower panels deep maroon, and chassis lighter shade of maroon. Then draw vertical 1½-inch stripes, 2½ inches apart, in black, across the lower panels. This style of color effects may be worked out in the reds, greens and blues, and for the season of 1908 it bids fair to prove the piece de resistence in combination novelties.

To obtain a similar color novelty in carmine, bring the ground for the glazing up to the final coat, making the ground for a deep carmine. Then vertically across the lower panels draw ½-inch lines of Tuscan red, 1 inch apart. Then glaze the entire surface with carmine. The, at a distance, almost invisible effects work out admirably upon a fairly close inspection. Philadelphia red is a warm, brilliant red, of a splendid color depth, closely allied in shade to the now famous automobile red, but a bit lighter in tone. This color may be used as an all-one-color scheme pigment, or it may be used in combination with Kimball red, a dark, rich, new western red. Use Kimball red for upper panels, and Philadelphia red for lower panels and chassis, and black all the body mouldings. Imperial red, with

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fairly the brilliancy of carmine thrust over a field of vermilion, is another red fit for 1908 honors. It can be effectively combined or alternated with any number of an army of other reds. With upper part of the automobile body painted maroon and lower part Imperial red, with a ¼-inch black stripe skirting the panels, you have a combination to catch the fancy of prince and pauper alike.

In greens take the deep, bottle green, made by glazing with yellow lake, and coat the body in solidly. Stripe the panels with double ⅛-inch lines of black, Z inch apart, and 2 inches from edge of panels. For exclusive city use, paint upper panels black, lower panels deep Quaker green, and run a line of gold leaf around all the panels. Paint the chassis light shade of Milori green. Interstate green, a little lighter in tone than olive green, deep, and with more depth and lustre to it, especially when glazed with yellow lake, will be a next year's star in automobile color realms. The upper panels of the automobile body may be painted maroon and lower panels and chassis Interstate green, the whole tricked out with lines of black. Saratoga green, a few shades lighter than Brewster green, light shade, is a new green of striking color lustre, and produces a fine field of green when used alone, and striped with dainty lines of automobile red or No. 40 carmine. Or it may be used effectively in combination with other greens, preferably with darker greens above it.

Puritan blue is not listed in color grinders' price schedules, but it is entitled to attention, nevertheless. It is a dark, brilliant blue, and for park and boulevard service it is especially suited. Under hair lines of silver white it affords luxurious effects. It can be used with much success in combination with cobalt blue or with azure blue, deep shade. Manhattan blue has all the wealth of color, or should have, without the sombre touch of ultramarine blue, but possesses a lighter tone. Outlined with vertical stripes of black after the style above described, this blue shows royal effects.

There are at least 24 members of the blue family, all of which may be employed singly, or in combination, upon the automobile. They all have the elegance which invariably attaches to really sumptuous colors, but are not so well adapted for touring car service and across country work as colors of bright er tone and livelier suggestions.

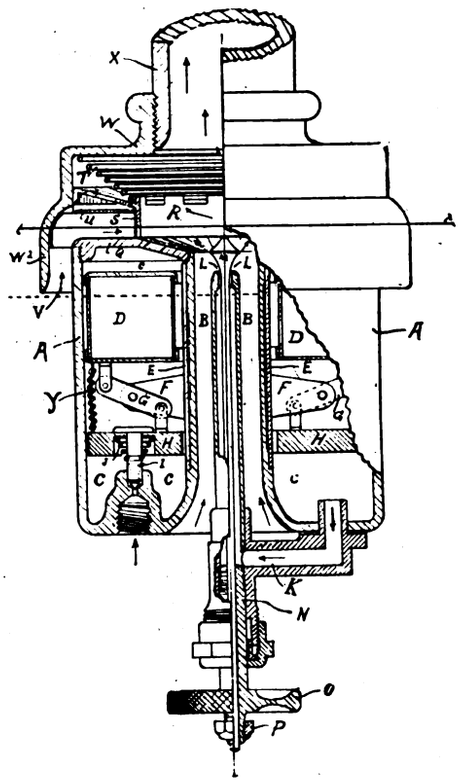
Novelty in a Gasolene Traction Engine.

A distinct novelty is to be found in the case of a patent recently granted on a form of gasolene traction engine in which the principle of the locomotive exhaust blast is utilized to create a draught through the radiator thus obviating the need of a fan. While not directly applicable to the purposes of the ordinary pleasure car, there is yet sufficient apparent worth in the idea to commend a study of it to the consideration of designers of cars of the common type.

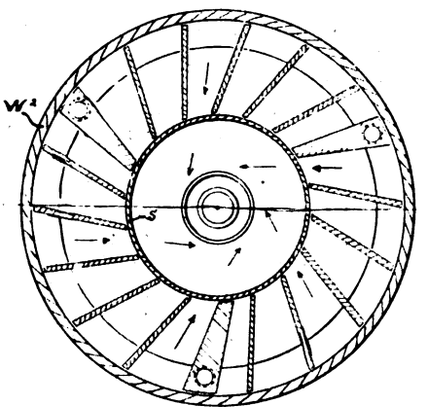
UTILIZES CENTRIFUGAL FORCE

Novel Features in a New Carburetter—How the Whirling Principle is Employed and What it Effects.

Two features of novelty and rather unusual merit, are comprised in the new Watts-Detroit carburetter, which has just been placed on the market by the Watts-Detroit Carburetter Co., Detroit, Mich. One of these is designed with a view to elimin-



ating all effects of jar and shock to the device no matter how induced, the construction also compensating for the effect of changing level owing to the inclination of the road. The other feature is intended to



aid in the mingling of the fuel ingredients by a most ingenious application of the principle of the whirling spray.

The popular concentric float principle is employed, to which is added a counter-balance, which not simply steadies the motion of the float, but also acts as a dash plunger, preventing any tendency to dancing, and regulating its motion. The auxiliary air is made to entirely surround the mixing chamber, its entrance being through a series of horizontally inclined converging vanes, which tends to establish a spiral rotation in the mixture as it enters. The effect of this rotational motion is to cause any particles of liquid which may be entrained in the gas, to be thrown outwardly by centrifugal force, thereby encountering directly the concentrated stream of extra air as it enters the chamber, by which means it is broken up and mingled. The inertia of the gas, further tends to continue the spiral motion as it is delivered to the intake manifold, thus effectually preventing any tendency to stratification or pocketing of the fluid.

Structurally, the device is of compact and simple construction. As will appear from the accompanying sectional illustration, the outer shell, A-A, which is a brass casting, carries the central air passage and induction tube, which is constricted through its central portion, the concentric float chamber, C-C, carrying in addition to the usual float, D-D, the counterbalance and plunger disc, H-H, which is linked to the float by means of the equalizing levers, G-G, pivoted to brackets, F-F, carried by the tube, E-E.

The fuel inlet valve, I, is held to its seat by the spiral spring, J, and therefore remains closed except when acted upon by the float mechanism. The jet, L, is controlled by the conical valve, M, regulable from below by means of the adjusting screw, N, and throws a conical stream of fuel up into the mixing chamber, under the influence of the central draught of air drawn through the induction tube from the base of the carburetter.

The cover of the mixing chamber, G, which is in the form of a hood, carries also a series of vanes, placed tangent to the chamber proper, and equally spaced, as a result of which they converge rapidly, forming a series of ducts which introduce the air at a high velocity, to the chamber, R. The amount of air admitted is controlled by means of the automatic annular valve, S, which is seated by the spiral spring, T, over the auxiliary air passage, V, which surrounds the shell. The cap, W-W, covers the top of the mixing chamber and guides the air valve. The outlet pipe X, is vertical and in the center.

Such is the effect of the vane arrangement of the extra air inlet that a suction of one pound per square inch produces a velocity of flow of 332 feet per second at the throats of the tangential passages, which corresponds to a rotational velocity of something like 500 revolutions per second. This rate being sufficient to throw out and break up any particles of fuel which may have passed the jet without being vaporized, thus producing theoretically a perfectly uniform mixture.

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OIL TREATMENT OF MACADAM ROAD

Chicago Experiments in Lincoln Park with Good Results—Method Employed to Make a Dustless Roadway.

The treatment of macadam roads with mixtures and emulsions of oils was begun in Lincoln Park, Chicago, during May, 1907, says M. H. West, assistant superintendent of that public domain, in an article dealing with the subject of dust laying and road preservation. In this park the roads are for the most part limestone macadam, but owing to the excessive and fast increasing automobile traffic it was found necessary to re-surface sometimes twice a year.

It was found very difficult to sprinkle with just the right quantity of water, so that no excess would show on the surface. During hot, dry days the dust would arise within a few minutes after the sprinkling cart had passed.

In experimenting with asphalt oils the paramount idea was to lay the dust. Whatever lasting properties the material might give to the road metal was a secondary consideration. Experiments were started with California asphaltum, 98 per cent. pure, bought of the California sales agency at $30 per ton, or about 10 cents per gallon. Sections of road were built with the pure asphaltum oil incorporated in the road metal, as well as being merely sprinkled upon the surface in the form of an emulsion with soap and water. In either form the material proved too sticky to warrant further use.

Experiments were continued, using Kansas and Kentucky fuel oils of different specific gravities, but with minor success, as there seemed to be a lack of sufficient body to maintain a wearing surface. A mixture of two or three oils was then tried, and at last results warranted the adoption of a mechanical mixture or emulsion formed by the use of soap and hot water with the California asphaltum previously described, and a Kansas fuel oil of about 26 degrees specific gravity, purchased at 3½ cents per gallon.

A great deal of care was found necessary in securing a soap which would work best with the water at hand. For the hard lime-water of Lake Michigan, the "Tak-a-nap" brand, a soft naphtha soap, gave the best results. This emulsion when applied to the road surface does not become sticky, on account of the lubricating properties of the Kansas oil, but on the contrary, presents a malleable, rubber-like cushion, which rolls down to a smooth surface under automobile traffic. It penetrates into the road metal sufficiently to give the desired bond, and the surface retains sufficient adhesive properties to cause dust particles to combine with the road surface for a considerable length of time. The road assumes a dark seal brown color, restful to the eyes, and emitting no disagreeable odor, such as is commonly noticed on oiled roads. Traffic may continue unmolested while the oil is being applied, and no bad results have been noticeable on rubber tires or on vegetation.

The mixing plant consists of a series of three 200-gallon hogsheads, set close together on end with their top heads removed. These hogsheads are connected at the bottom with three-inch pipe having gate valves. In each of these receptacles are pipes for live steam and for cold water. From the bottom of the hogshead connecting pipes lead to a steam pump of about 40 gallons capacity. Arrangements are made so that the material can be pumped through any one of the hogsheads back into the same or other compartments through a reduced nozzle; or, so that the material may be pumped from the oil delivery wagon to any of the receptacles; or, from any of the receptacles into a sprinkler, which is used in applying the emulsion to the road.

In making the emulsion, 60 gallons of water are drawn into two of the hogsheads, the third hogshead being disconnected and reserved for heating water for subsequent use. Live steam is then turned on, and the water brought to a boiling point. Fifteen pounds of soap are then added, and the water allowed to boil five minutes longer. Sixty gallons of the Kansas oil are then added, and the mixture allowed to pass out of the bottom of one hogshead, through the steam pump back into the top of hogshead number two, through the agitating hose for about five minutes, when one-half barrel of California asphaltum is added, and the whole mixture allowed to mulsify for twenty minutes longer. It is then pumped into a distributing sprinkler of 800-gallon capacity, fitted with an adjustable cup discharging attachment.

After receiving the stock solution, the sprinkler is filled to its capacity with boiling water. Eight hundred gallons of the emulsion will cover approximately 4,000 square yards of road surface.

Four or five applications should be made as close together as practicable.

Roads in Lincoln Park, treated in this manner on the 19th of June, and having no further applications of oil, have remained in good repair until the middle of October, when a limited amount of patching was found necessary. A number of holes appeared in the surface, which were cleaned and deepened, after which a concrete formed of small stone screenings and hot mixed oils were filled in and tamped down. These roads have given entire satisfaction, there being absolutely no dust visible during the summer months, night or day, and the cost did not exceed one-half cent per square yard for the five applications of emulsion put on in June. One or two further applications will be necessary to carry the roads through the winter.

On several pieces of road where resurfacing was necessary, the following method was used: The road was spiked by steam roller, after which a scarifier was used until the surface was formed to the proper grade. The emulsion was then applied until the road became exceedingly wet. The roller was then sent over the road until the oil and water appeared on the surface, when screenings were put on, and it was again rolled until the surface became dry and thoroughly packed. This allowed the emulsion to penetrate to a depth of four to five inches.

This treatment has been found successful where weather conditions were good. The road must be allowed to harden for 24 hours before traffic is resumed over it, and the work should be done when the weather is hot and dry. Considerable more oil is used in this method of treatment, and the cost for oil and for labor of regrading and resurfacing, costs approximately three-quarters of a cent per square yard.

Where it is found necessary to redress the road with stone, the best results have been obtained by using a three-inch macadam. The large size of the stone gives it an anchorage not easily displaced by passing vehicles or horses' feet. The oil and screenings fill the interstices, giving a bond much more firm than that ordinarily obtained by the use of water. The finest limestone screenings are used. With the use of oil, limestone screenings give better results than do granite or gravel. The absorbent properties of the stone allows the oil to penetrate, giving a better bond than is afforded with the harder stones.

In a series of experiments in succession with the use of pure oils on one of the boulevards subjected to the greatest amount of automobile traffic, the following to date has been found most successful. The badly worn road was spiked and scarified to the depth of four or five inches, and a mixture of 75 per cent. California asphaltum and 25 per cent. Kansas fuel oil, heated to 200 degrees, was applied, one-half gallon per square yard. Three-inch macadam was then spread over the surface, bringing the road to the required grade.

This was rolled thoroughly with a 15-ton roller until the oil began to show on the surface, after which a second application of the hot oils, also to the amount of one-half gallon per square yard, was applied. Limestone screenings were then spread over the surface, and the road was thoroughly rolled; screenings being spread wherever the oil came through. This method was continued until the surface presented a uniform light brown color, and no material adhered to the roller. Traffic was allowed to be resumed at once. Two days later, one application of 10 per cent. emulsion was made.

This road has had no subsequent treatment, and now presents a uniform pavement, but which is soft enough to allow a footing for horses' hoofs, and to prevent automobiles from skidding. The noise resultant from hard pavements is entirely done away with.

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The Week's Patents.

864,627. Wheel. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a Corporation. Filed Sept. 29, 1906. Serial No. 336,742.

1. A traction wheel for vehicles comprising a wheel hub, spokes extending therefrom, a rim carrying the tire and having means for engagement by the outer ends of the spokes to allow longitudinal and transverse movement of the rim and spokes one relative to the other, and a device for locking and unlocking the rim and spokes, the said device being carried by the rim and having a head at one end adapted to be moved into or out of contact with a spoke.

864,680. Automobile Truck. Thomas Neville and Harry A. Thayer, Oshkosh, Wis Filed Jan. 22, 1907. Serial No. 353,538.

In a device of the class described, a wheeled frame, spaced treads mounted upon the frame, and provided with spaced openings, spaced side pieces upstanding from opposite edges of the treads, chuck blocks proportioned to be disposed upon the tread and between the side pieces, and pins insertible through the openings in the tread and to prevent displacement of the chuck blocks.

864,687. Vaporizer. Carlton R. Radcliffe, New York, N. Y., assignor to International Patent Corporation, Jersey City, N. J., a Corporation of South Dakota. Filed June 5, 1906. Serial No. 320,288.

1. In a vaporizer, an annular reservoir, a fuel discharge nozzle located within the passage through said annular reservoir, a chambered discharge pipe, a perforated partition at the side of the mixing chamber, a controller gate co-operating with said partition to open and close the passages therethrough, a movable funnel-shaped controller co-operating with said gate, having a passage through the same, said passage being located over said nozzle, a portion of said funnel co-operating with said gate to provide air passage around said funnel and between it and said gate, and means to move said funnel toward said gate to reduce the size of the passage between said parts, movement in an opposite direction being produced by the inrush of air.

864,702. Bonnet for Motor Vehicles. John Sherwin, Cleveland, Ohio, assignor to The Garford Company, Elyria, Ohio, a Corporation of Ohio. Filed March 3, 1906. Serial No. 303,999.

1. As an article of manufacture, a "bonnet" for automobiles consisting of a metallic casing having an insulated material applied to and completely covering its inner surface and intimately united therewith.

864,706. Locking Device for Screw Adjustments. James M. Smith, Philadelphia, Pa., assignor, by mesne assignments, of one-half to The Autocoil Company, a Corporation of New Jersey. Filed April 5, 1907. Serial No. 366,472.

1. In combination, a bridge for an induction coil having a vibrator screw in threaded engagement therewith, a friction clamp or shoe slidable in and guided on all sides by said bridge, said shoe having an elongated opening to receive said screw, and a spring for impelling said shoe in a direction to frictionally bind against the threads of said screw.

864,707. Reversing and Speed Changing Gearing. George G. Talmage, Washta, Ia. Filed Nov. 10, 1906. Serial No. 342,826.

1. In a reversing and changeable speed gearing, a drive shaft, a sleeve mounted on said shaft having one end forming the driving member of a differential gearing, the other end of the sleeve formed with a flange, a pinion keyed to said drive shaft, and means to impart motion to said flange from said pinion, substantially as shown and described.

864,708. Power Transmitting Gear. Geo. G. Talmage, Washta, Iowa. Filed Nov. 24, 1906. Serial No. 344,972.

1. A universal joint connecting two shafts comprising a ring, yoke arms extending from one of said shafts and pivotally secured to said ring, a cross-head on one end of the other shaft having a longitudinal hole therein, a pin extending through said hole and the ring, and a set screw secured in said cross-head and engaging said pin, substantially as shown and described.

864,709. Sparking Plug for Gas Engines. Jesse F. Thomas and Herman J. Bolinski, New London, Wis. Filed Aug. 29, 1906. Serial No. 332,524.

1. A sparking plug for gas engines comprising a hollow casting provided with a series of external flanges forming intermediate air spaces, an insulator extending through said casing and the insulator for containing a cooling compound, substantially as described.

864,724. Fluid Clutch Mechanism. Frederick M. Brown, Warren, R. I., assignor of two-thirds to Isabel F. Harris, Providence, R. I. Filed Feb. 2, 1906. Serial No. 299,224.

1. A fluid clutch mechanism comprising an outer casing, an inner casing arranged within said outer casing and forming an inner chamber at one side of the center of the outer casing and having inlet and outlet passages communicating with said inner chamber through its opposite sides, a drive shaft extending through said outer casing and inner casing, an idler shaft journaled within said casing and spaced from the drive shaft, intermeshing gears carried by said shafts within said inner casing with their interengaging teeth in alignment between said inlet and outlet passages, a valve arranged in said outlet passage and operating to regulate the flow of liquid through the inner chamber, and means for actuating said valve.

12,683. Vehicle Brake. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed April 27, 1907. Serial No. 370,729. Original No. 799,690, dated Sept. 19, 1905. Serial No. 240,424.

1. The combination with a stationary casing and a driven part or shaft, of a multiple disc brake comprising a series of discs or rings a portion of which are connected with said driven part or shaft, to rotate therewith, and a portion of which are en-


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gaged with said casing so as to be restrained from rotation, combined with a pressure cylinder attached to said casing, and a piston in said cylinder for forcing the said discs or rings into frictional contact with each other when a braking force is to be applied.

864,766. Starter for Explosive Engines. John B. Bartholomew, Peoria, Ill., assignor to The Bartholomew Company, Peoria, Ill., a Corporation of Illinois. Filed Sept. 1, 1903. Serial No. 171,545.

1. In a starting device for an internal combustion engine, the combination of the engine shaft, a fly wheel mounted thereon, having a friction surface, a rotary reciprocating friction shoe arranged to engage with the friction surface of the fly wheel when moved in one direction, and arranged to easily separate therefrom when moved in the opposite direction, means for moving the friction shoe bodily toward the fly wheel to engage with and turn the latter forward or for moving it bodily away from the wheel to disengage the shoe, and automatically acting devices for disengaging the shoe from the fly wheel when it is carried backward, substantially as set forth.

864,823. Variable Speed Gearing. John S. Barnes, Rockford, Ill., assignor to W. F. & John Barnes Company, Rockford, Ill., a Corporation of Illinois. Filed June 4, 1907. Serial No. 377,260.

1. In a variable speed gearing, the combination of a driving member, and a driven member, of a plurality of spur gears fixedly connected to the driven member, a plurality of shafts arranged equi-distant from the driven member, a spur gear fixedly connected with each shaft and meshing with one of the spur gears connected to the driven member, a spur gear on the driving member, a secondary spur gear connected to each shaft, and an intermediate spur gear in constant mesh with the spur gear on the driving member and capable of being moved into mesh with any one of the secondary spur gears of the shafts.



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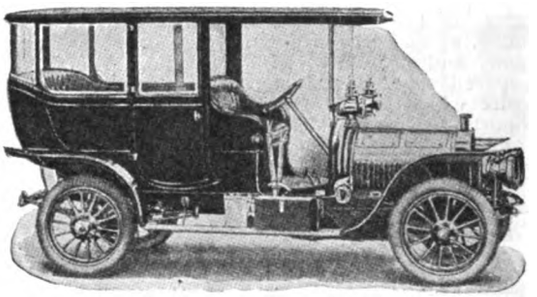
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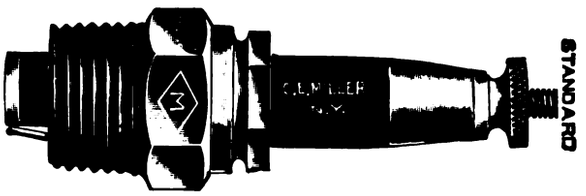
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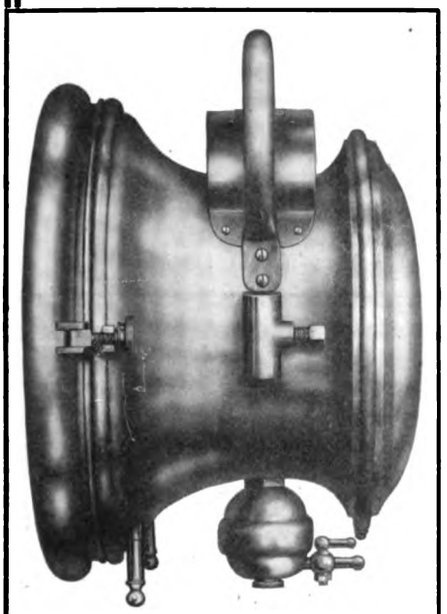
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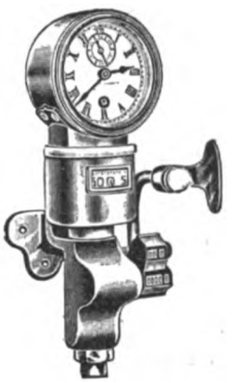
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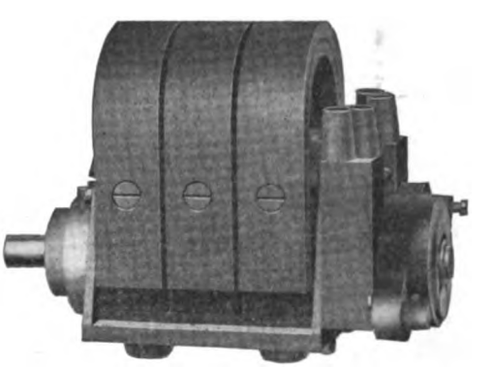
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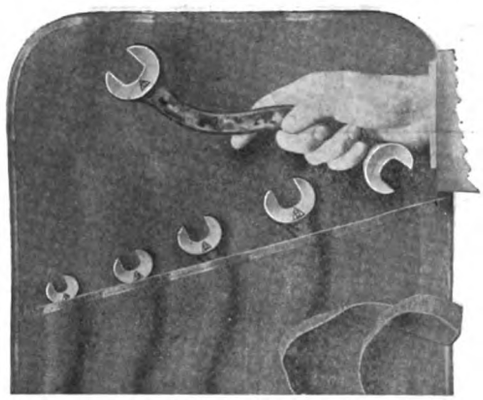
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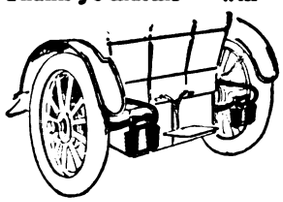


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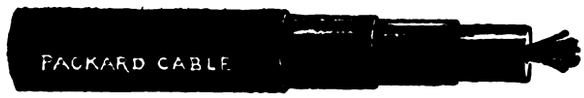
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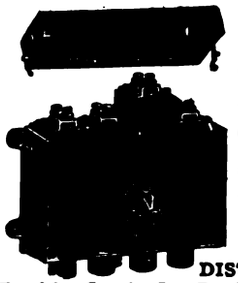
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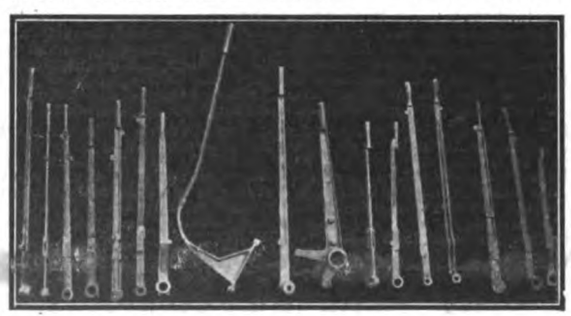
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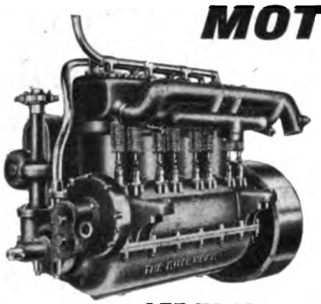
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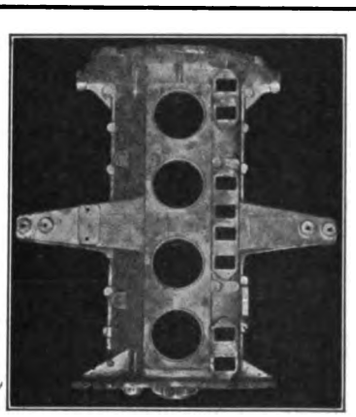
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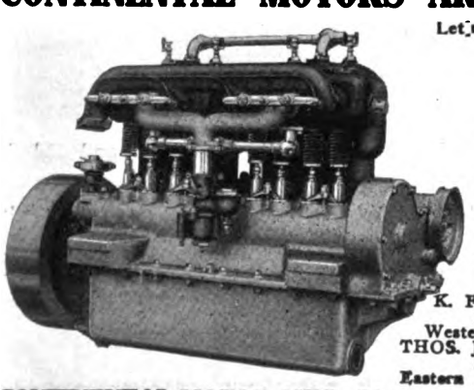
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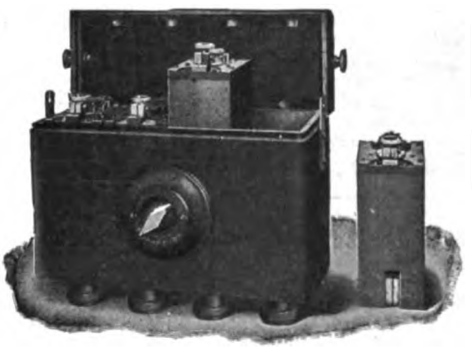
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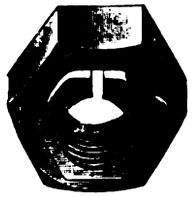
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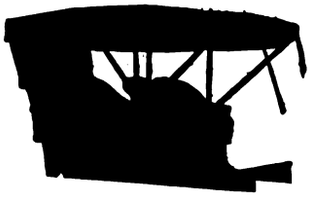
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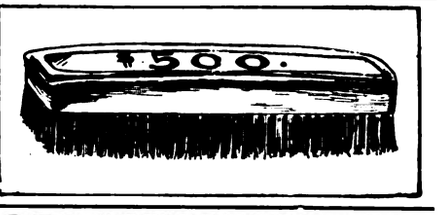
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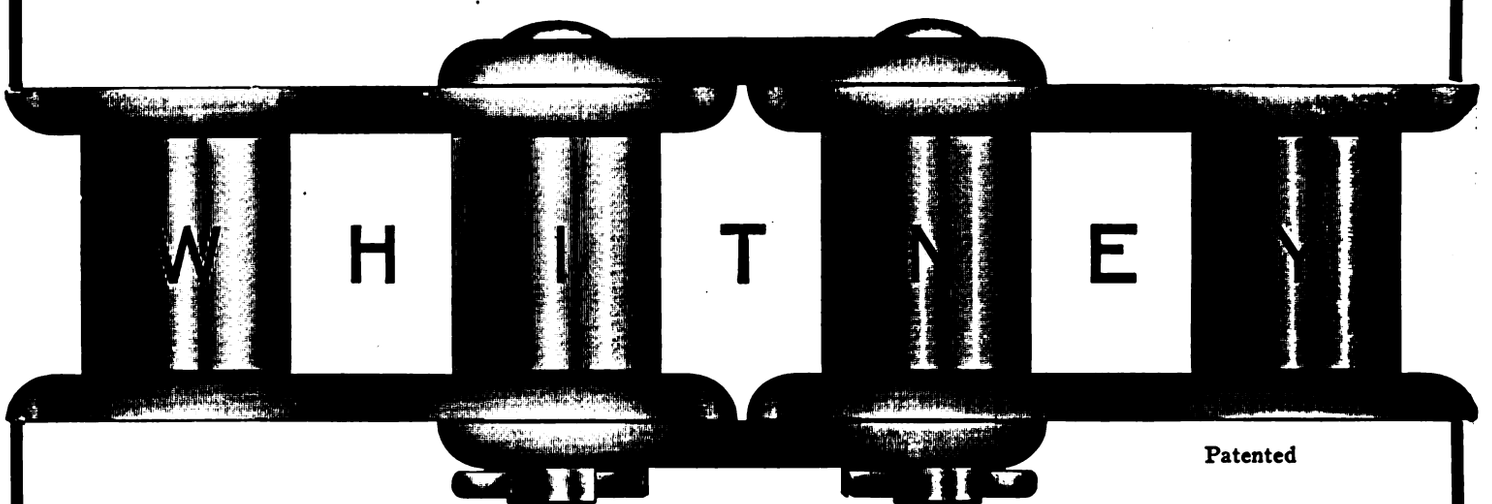
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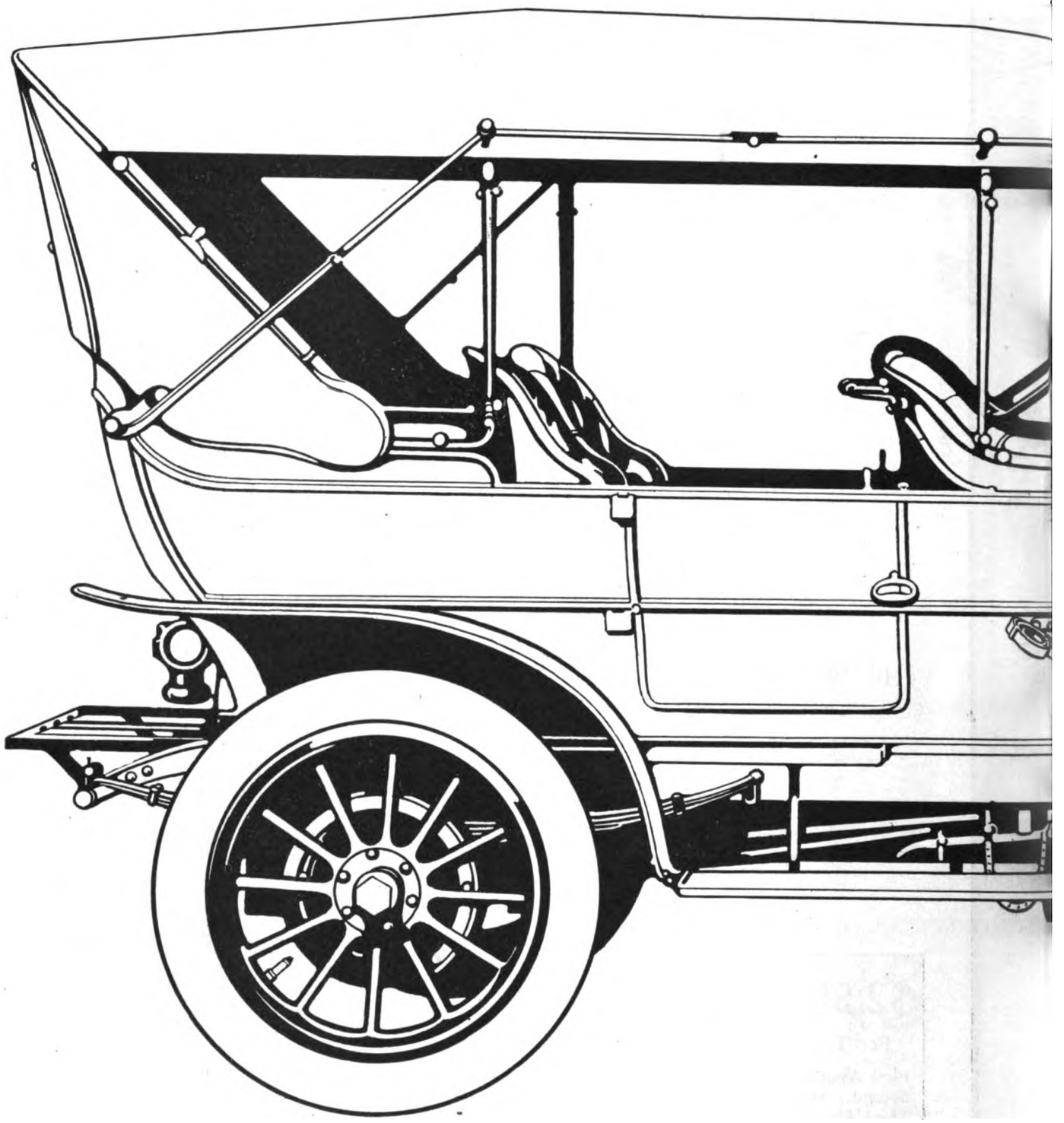
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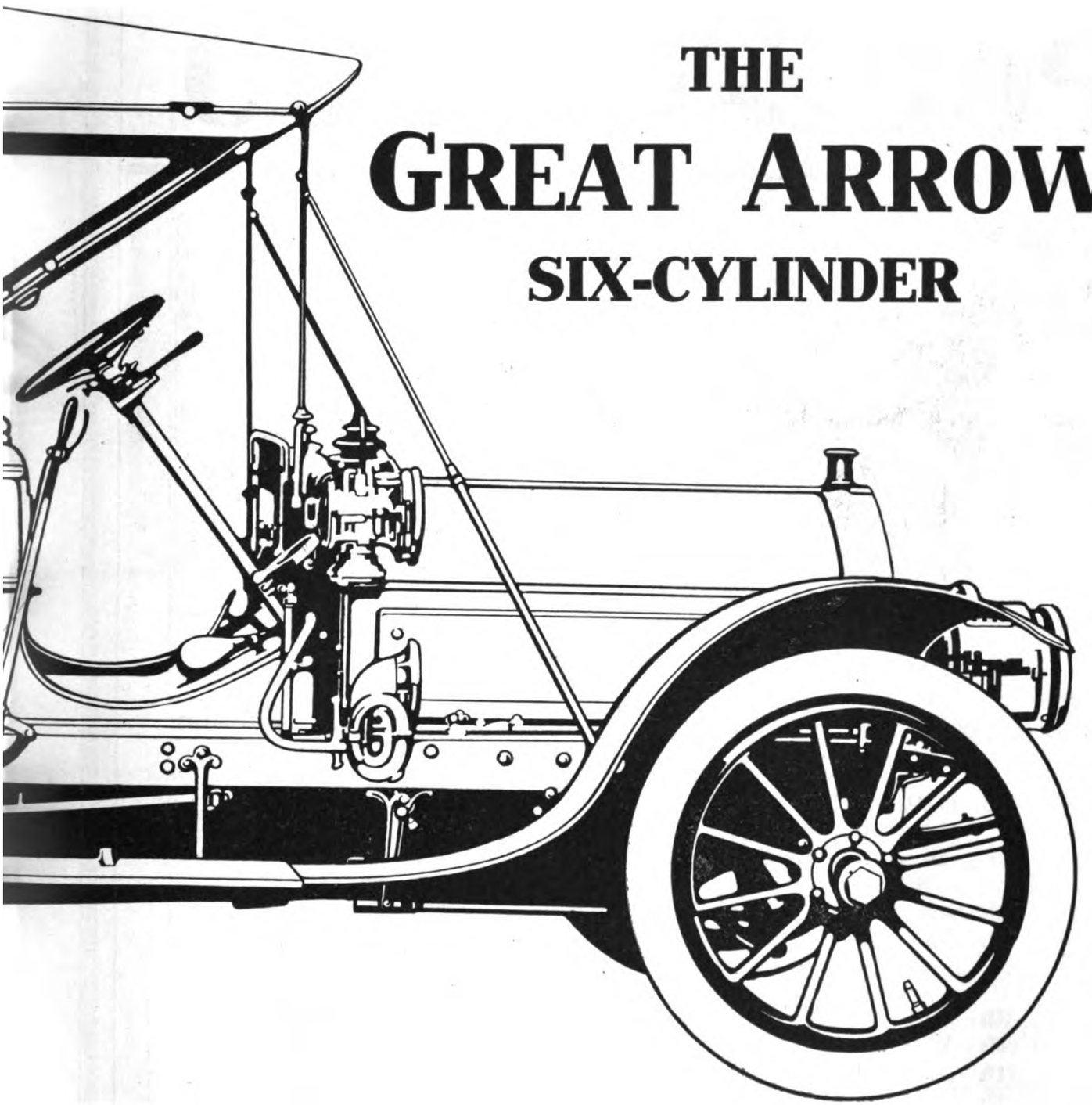
* "A Six-Cylinder Courtship" Saturday Evening Post

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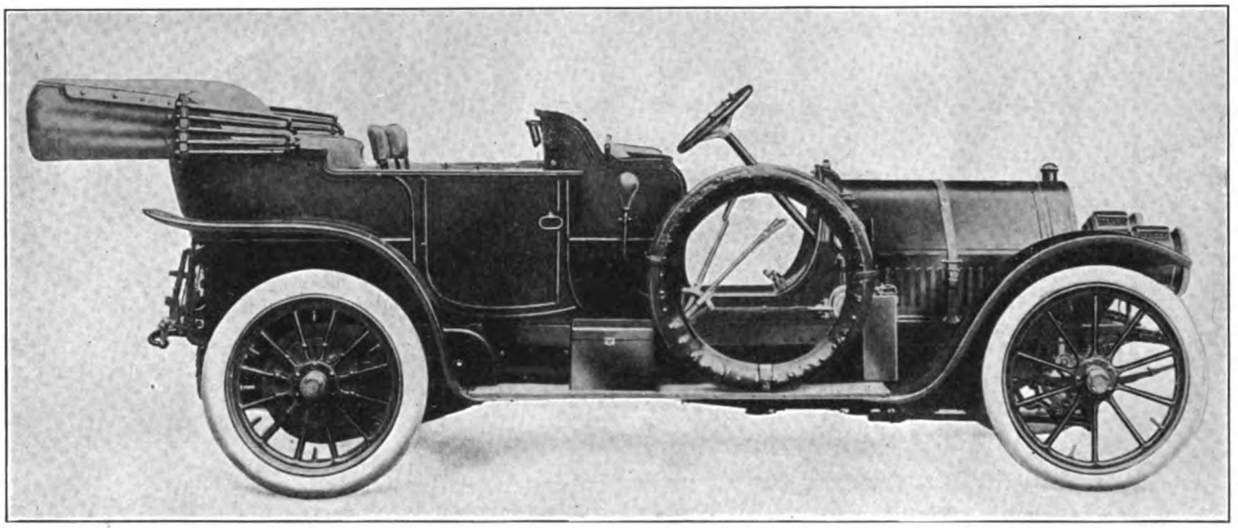
HERE ARE THE 1908 TOURING CARS

4-cylinder Great Arrow 30 H. P., Price $4000
4-cylinder Great Arrow 40 H. P., Price $5000
6-cylinder Great Arrow 40 H. P., Price $5500
6-cylinder Great Arrow 60 H. P., Price $6500

The George N. Pierce Company, Members Association of Licensed Automobile Manufacturers **Buffalo, N. Y.**

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POPE-TOLEDO



One of Our 1908 Models

As to the policy of the Pope-Toledo factory for 1908, we make the following statements:

1st—Our line for 1908 as shown at the New York Show was acknowledged by dealers, users and the press to be the finest exhibited.

2d—This product is now being manufactured and in fact is largely completed ready for assembling.

3d—Deliveries are being made with our usual promptness in rotation as booked.

4th—The business is being pushed aggressively and progressively; our old agents are being protected and we want new *live ones only*, where not satisfactorily represented.

5th—Our "square deal" policy towards the user and dealer is being continued.

6th—We will make enough cars to take care of the demand.

7th—An aggressive advertising and publicity campaign is being pushed.

8th—Our new catalogue, the finest we have ever issued, is in the printer's hands.

If you want the finest line of cars made in America today, correspond with us at once

Pope Motor Car Company, *Members A. L. A. M.* **Toledo, Ohio**

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THOMAS

THE E. R. THOMAS MOTOR CO. presents four styles of chassis and nineteen styles of bodies

Thomas 4-20 Town Car

Combines luxury with utility and necessity; designed particularly for city and suburban use in good or bad weather, for calling and shopping, for the theatre, for social functions and touring on good roads. This car is furnished with brougham, landaulet, cabriolet, limousine and doctor's car bodies. In Europe this style of car is the vogue, as it rapidly is becoming in America. Prices, $3,000 to $3,250.

Thomas 4-40 Detroit

A marvel of smooth and quiet running with a dash in operation and distinctive style in appearance that denotes the thoroughbred and fascinates the most critical. The 4-40 has been strengthened and improved where the wisdom of experience has suggested. It is especially designed to successfully eclipse at a much lower price, shaft driven cars of the highest price and class. It is equipped with runabout, tourabout, touring and limousine bodies. Prices, $2,750 to $3,750.

Thomas 4-60 Flyer

The Old Reliable is smoother, snappier, faster, lighter, quieter and roomier than ever. It has been redesigned and refined until it has become one of the most beautiful and stylish cars to be seen. The mechanical changes are largely refinements, though the motor generates more power. A bearing between each cylinder is still one of its chief characteristics. It is equipped with runabout, tourabout, landaulet and limousine bodies. Prices, $4,500 to $5,700.

Thomas 6-70 Special

This is the climax of automobile construction, and is one of the most powerful and flexible cars made, retaining as it does, the structural principles that have counted so much for reliability in the Thomas 4-60 Flyer. There is not a single experimental feature in its entire construction. For speed, smooth running on hills and bad roads, and for slow speed, all on the high gear, the 6-70 Special is not equalled. It is equipped with runabout, touring, landaulet and limousine bodies. Prices, $6,000 to $6,900.

E. R. Thomas Motor Co.

Members A. L. A. M. BUFFALO, NEW YORK

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"American Mors"

THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

UARANTEED FOR ONE YEAR

Send for our Catalog. Address Dept. H

The St. Louis Car Company

Automobil. Department, St. Louis, Mo.

New York: 1706-1718 Broadway, cor. 54th Street

Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

First Gun

For the 1908

Single Cylinder

Cadillac

Greenville, S. C., Nov. 8, 1907.

CADILLAC MOTOR CAR CO.,
Detroit Michigan.

Gentlemen:—I want to tell you how perfectly delighted I am with the Model T 1908 Single Cylinder Four-passenger Cadillac received a few days ago. I have never seen an engine with such snap, vim and energy. She takes hills like a four-cylinder—and how any man can want anything better—I can't see. This new car rides like a Pullman—and has all the speed and power any reasonable man can possibly want. I must say—I am surprised myself, though I have been a Cadillac enthusiast for years. It is the most magnificent running car I have ever sat in, and on the road this afternoon I passed cars costing more than twice as much, easily. I have examined this car carefully and tried it thoroughly and I do not believe you can make an improvement in it anywhere. Yours truly,

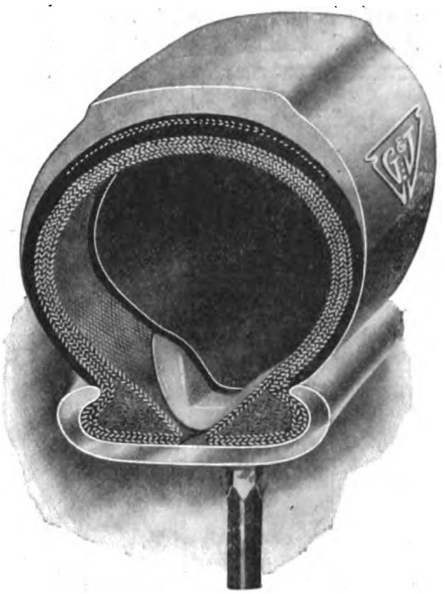
EUGENE F. BATES.

The price of the Model "T" is $1,000. It is the same dependable, constant and economical car that the single cylinder Cadillac has always been, only for 1908 it is better than ever.

Cadillac Motor Car Co., Detroit, Mich.

Member of Association of Licensed Automobile Manufacturers.

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Manufactured in a factory devoted exclusively to the production of pneumatic tires.

Manufactured by the Pioneer builders of clincher Automobile tires in America.

Spaces 38 and 39 Coliseum
Chicago Auto Show

Years of study and experience are necessary to produce a tire that will prove satisfactory under all conditions. Our plant is devoted exclusively to the manufacture of pneumatic tires, and as pioneers in that line we have had the necessary experience, and the results of our close study in one line exclusively are shown in our 1908 tires.

G&J TIRE CO.
INDIANAPOLIS, IND.

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Detroit: 247 Jefferson Ave
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QUALITY—QUANTITY—QUICKNESS—COUNT IN PLACING ORDERS

AXLES—REARS; FULL FLOATING TYPE, SHAFT DRIVE SINGLE OR DOUBLE BRAKES, QUIET GEARS
FRONTS; SOLID I BEAM SECTION. PADS FORGED ON

All Axles with Plain Ball, "F. & S." or "H-B" Bearings—Two Standard Sizes

CLUTCHES—Cork Insert Design, Cone Type

STEERING REACHES—High-Class, Tube Type

1-in., 1⅛-in. and 1¼-in. BALLS

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Samples Promptly Furnished to Responsible Parties for Inspection and Tests

SOLD EXCLUSIVELY BY

The American Distributing Co., AMERICAN TRUST BLDG. **Cleveland, Ohio**

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Elmore Valveless 2-Cycle

120 Elmore Cars kept in repair by one man

1908

Elmore Thirty, $1750
F. O. B. Factory

The full force of this fact—that 120 Elmore cars in New York are kept in repair by one man—will not come home to you till you have considered what it really means.

Just imagine, one man for instance, trying to take care of half that many cars of the four cycle type—with their hundreds of trouble-giving valves, cams, rollers, springs, lifts and other mechanical complications.

Yet it is being done in New York with the Elmore—because it is the Elmore, because the Elmore is elementally simple, because it has no valves, rollers, lifts, springs, or cams at all, and because it is the most perfect type extant of two-cycle construction.

Elmore Forty, $2500
F. O. B. Factory

If you wish verification of this astonishing and significant fact you can get it through inquiry addressed to A. E. Ranney & Co., New York agents of the Elmore company.

You will find further verification of the fact that Elmore repairs are practically nil and non-existant in every city in the country in which Elmore cars are operated—from every man, in fact, who owns an Elmore car.

From this same man—if he owns a 1908 Elmore car—you will also find verification of the fact that the Elmore ignition system with the installation of the Atwater-Kent spark generator is positively the most wonderful and economical ignition system in existence—a system that will run a car 2,000 miles on one set of six ordinary six-inch dry cells and drain those cells to so low a point that cells discarded by others as useless will operate the Elmore car for miles.

Write for the Elmore literature—but see an Elmore agent.

THE ELMORE MFG. COMPANY, 1104 Amanda Street, CLYDE, OHIO

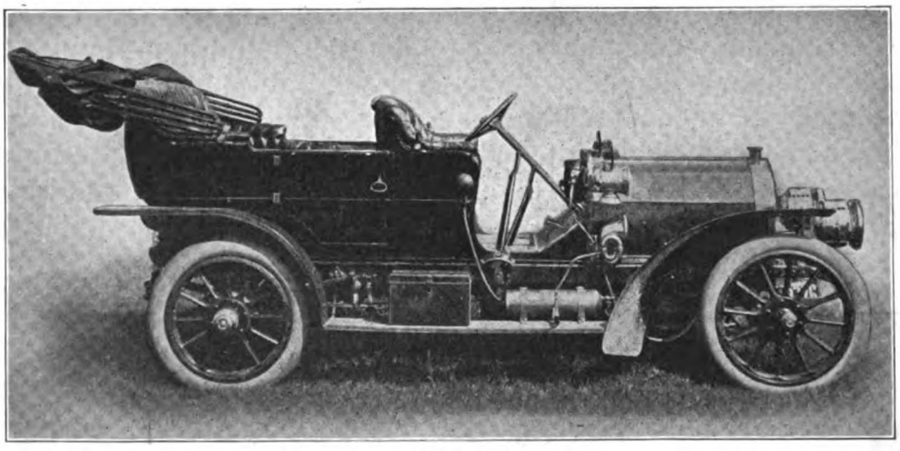
Members A. L. A. M.

Type C — **PENNSYLVANIA** — **50**

Touring Car, Roadster, Touring Roadster, Limousine — **$2800, with Magneto, $3000** — **Valve-in-head Motor, Chrome Nickel Steel, Annular Bearings**

PENNSYLVANIA DISTRIBUTORS.

Los Angeles, Cal.: Greer-Robbins Company, 1501-1505 S. Main St.
San Francisco, Cal.: City Hall Automobile Company, 66 Fulton St.
Boston, Mass.: Frederick E. Randall Company, 245 Columbus Ave.
Chicago, Ill.: Hamilton Automobile Company, 1218-1220 Michigan Ave.
Providence, R. I.: Pennsylvania Motor Car Agency, 133 Washington St.
Denver, Colo.: Denver Omnibus & Cab Company, Denver.
Kansas City, Mo.: Auto-Motor Company, 1122-1124 East 15th St.



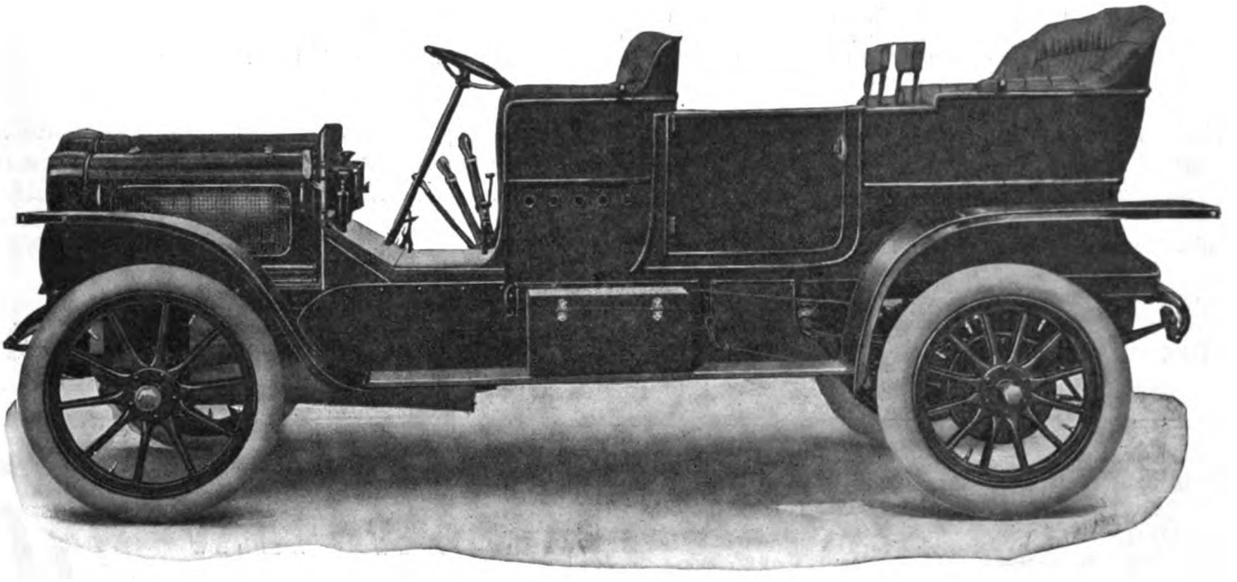
PENNSYLVANIA DISTRIBUTORS.

Pittsburg, Pa.: Bellefield Motor Company, 4514-16-18 Henry St.
Brooklyn, N. Y.: Charles F. Batt, 1378 Bedford Ave.
New York City: Archer & Company, 1597 Broadway.
Spokane, Wash.: Dulmage-Rose Automobile Company, 1212 Second Ave.
Philadelphia, Pa.: West-Stillman Motor Car Company, 153 No. Broad St.
Baltimore, Md.: Rice's Garage, North & Madison Aves.
St. Louis, Mo.: R. T. Harris, Washington Hotel.
Buffalo, N. Y.: Brunn's Carriage Manufactory, 1140 Main St.

Pennsylvania Auto Motor Company, Bryn Mawr, Pa.

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THE INCOMPARABLE
WHITE
THE CAR FOR SERVICE



WRITE FOR THE NEW WHITE CATALOG

We would like to send a copy of our new catalog to everyone interested in any phase of motoring. Everyone should read, for example, the description of the White generator, that wonderful steam-making device wherein the water is at the top and the steam at the bottom and wherein none of the conditions of the ordinary boiler are present. The references to the continuous success of the White in all forms of competition during the last seven years will also prove of interest. Also, we invite attention to the detailed specifications of our two models—one of 30 horse-power and the other of 20 horse-power—with touring car, runabout, limousine and landaulet bodies.

A POSTAL TO US BRINGS A COPY

THE WHITE COMPANY
CLEVELAND, OHIO

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Matheson

Every Matheson car turned out in the last ten years is still running and is reported to be in good condition. Most of the Mathesons turned out within the last three years have never had a single replacement and are still giving perfect service to their original purchasers. Many 1906 Mathesons have to date, been not only free from repairs but from even adjustments. We have many letters from owners of 1907 Mathesons who have given their cars hard and constant use for the last seven months without spending five cents for repairs.

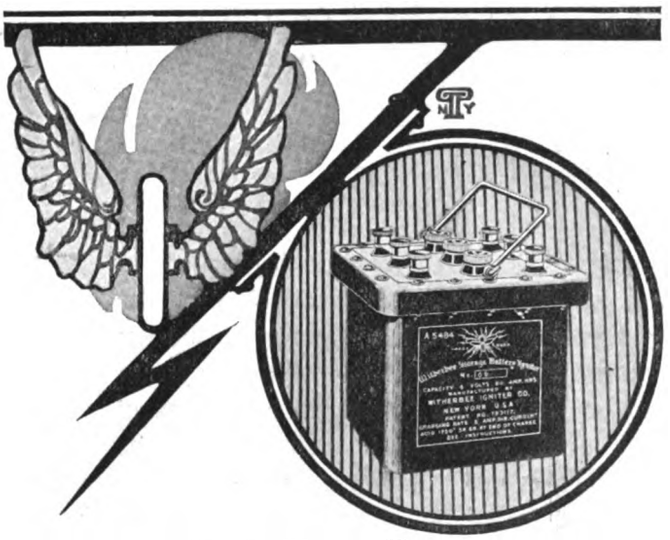
The salient Matheson features are those of the greatest foreign cars. The Matheson differs from these in one important respect—it's better. The great string of Matheson victories during the past season, its new speed records, hill climbing records, endurance records, its perfect scores galore in reliability contests, made not only without need of repairs, but without even adjustments, all these have repeatedly proven to us that there is no room for improvement in the Matheson. We have sought in vain for records of performance that would direct the improvement of a single feature. Feature for feature through the world's output of high powered cars, not excepting the best of the foreign makes, there is nothing that can compare with the Matheson for performance over American roads.

Write for our new booklet, "I Drove my Matheson—" by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. The Matheson sets a standard by which you may judge other high powered cars.

Licensed under Selden Patent **Touring Cars, 50 H. P., $5500** Guaranteed One Year

Palmer & Singer Mfg. Company

1619 Broadway (Formerly Matheson Co. of New York.) Factory at Wilkes Barre, Pa. **New York**



Walk Your Horses

It's a sure case of "walk your horses" if your motor car has not a perfect system of ignition.

The automobilist who wants horsepower; who wants to get the "full value" out of his engine equips his car with the

Battery Witherbee

The consistant performance of the battery Witherbee, has so standardized this product that it is included as "part equipment" on the greater majority of motor cars manufactured in this country.

In writing Department 20 for battery catalogue please request Wico Spark Plug literature and mention Motor World.

WITHERBEE IGNITER COMPANY

THREE FACTORIES.

NEW YORK 541 W. 43d St. CHICAGO, 1429 Michigan Ave. DETROIT, 220 Jefferson Ave.

BALTIMORE OFFICE: 510 Continental Trust Building.

The TWO NEW Columbia CATALOGUES OF

Gasolene Cars and Electric Vehicles

are handsome specimens of printing and faithfully show the 1908 cars.

If interested, apply to our branches or home offices.

Electric Vehicle Co., Hartford, Conn.

New York, 134 West 39th St. Chicago, 1332 Michigan Ave. Boston, 74 Stanhope St.

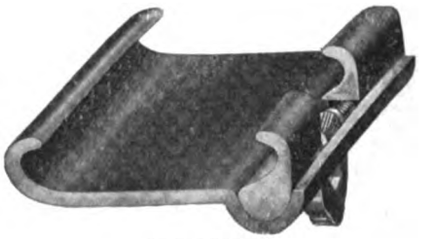
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MORGAN & WRIGHT TIRES

have made big gains in the tire field during the past season, due wholly to the fact that they have stood up in a way that commanded the attention of manufacturers, dealers and users.

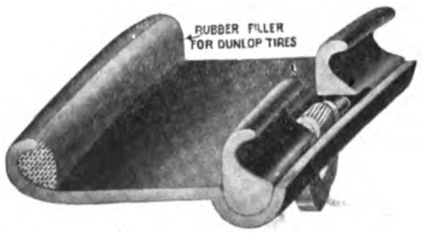
It is already clear that 1908 will be a banner year for good tires.

There is no method of making friends equal to the method of making good.



CLINCHER

The Improved Midgley Rim, illustrated above, accommodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.



DUNLOP

MORGAN & WRIGHT, Detroit

New York: 214 W. 47th St., 17 Warren St.
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Rochester: 55 Main St. E.
Pittsburg: 913-915 Liberty Ave.
Philadelphia: 13th & Cherry Sts.
Cleveland: 1829 Euclid Ave.
Dayton: 405-411 East Third St.
Minneapolis: 708 Hennepin Ave.
Atlanta: 90 No. Pryor St.
St. Louis: 538 N. Vandeventer Ave.
Kansas City: 605-607 E. 15th St.
Denver: 1562 Broadway.
Los Angeles: 118-122 E. Tenth St.
San Francisco: 423-433 Golden Gate Ave.
Portland: 86 Sixth St.
Seattle; Ninth Ave. and Pike St.

1908 Locomobile

Combines Proved Reliability With Increased Efficiency and Low Cost of Up-Keep

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The Purchase of An Automobile

has become a purely business transaction in which the returns in satisfactory service, reliability and economy of maintenance are balanced against the investment.

From the standpoints of economical maintenance, absolute reliability and minimum depreciation in market value, the

Rambler

stands preeminently the gilt-edge investment of the industry, a position won and held through years of satisfactory service.

The 1908 models mark the nearest approach to mechanical perfection ever attained.

Our advance catalog, now ready, will show you how and why and a demonstration will convince. Both are at you service. Write today or see the nearest Rambler representative.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

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CHICAGO MILWAUKEE BOSTON PHILADELPHIA SAN FRANCISCO

Representatives in All Leading Cities

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, November 28, 1907. No. 9

GETTING KNOX ON ITS FEET AGAIN

After Long Delay Obstacles to a Plan of Settlement are Removed—Terms of the Agreement Reached.

Objections which prevented the putting into operation of the plan of settlement submitted to the creditors of the Knox Automobile Co., Springfield, Mass., finally have been overcome and accordingly the liabilities will be capitalized and the creditors will practically conduct the business until their claims are discharged. As a result, the company may be said to be in a fair way of being again formally placed on its feet.

Under the terms of the agreement, the company will now issue preferred stock to an amount not to exceed $500,000, to be preferred as to assets and dividends, and to be 8 per cent. cumulative stock, with semi-annual dividends. One share of such stock of a par value of $100 will be issued for each $100 of indebtedness. The net earnings after payment of the 8 per cent. dividend, less whatever amount is required for working capital will be applied to retiring the stock; when it all is retired, the business will, of course, revert to the original stockholders.

The Knox company never had issued any preferred stock and its $363,000 of common stock will draw no dividends until after the retirement of the $500,000 of preferred stock, which now will be issued. The company made an assignment to A. N. Mayo on July 22d last and this plan of settlement was presented early in September. A large majority of the creditors promptly accepte it, but there were several of the larger ones who persistently refused their assent, and progress thus was blocked. What means finally were taken to overcome their objections has not been made known.

When the new arrangement goes into effect six of the nine directors and the clerk and the treasurer will be chosen by the holders of the preferred stock—the creditors—while the other three will be elected by the holders of the common stock who are the officials of the company.

About 200 creditors whose claims are of less than $100 each will receive cash in settlement. The Knox liabilities totaled $556,000, and the assets, as a going concern, $970,000.

Benson Goes from Tires to Cars.

E. R. Benson, secretary of the Hartford Rubber Works Co., has resigned that office to engage with the Cadillac Motor Car Co., Detroit. He will be identified with W. E. Metzger in the sales department. Benson has practically grown up with the Hartford company having worked his way up from the lower rounds; on that account, his change will prove in the nature of a considerable surprise.

Gas Engines Coming from Colorado.

W. H. Green, of Colorado Springs, Colo., has closed a deal with the Hassell Iron Works of that city for the manufacture of a gasolene engine of which he is the inventor and which is claimed to develop more power than the general order of engines. An addition, 60 by 75 feet, is being made to the Hassell plant, to provide for the new department.

To Build Wagons for Farmers.

The Dowagiac Automobile Co. is being formed in the Michigan city of that name for the manufacture of light, high-wheeled motor wagons, designed for farmers' use and which will sell for less than $500. J. A. and J. V. Lindsley, father and son, are the men responsible for the enterprise.

Makers' Committee to Meet in Chicago.

A meeting of the committee of management of the American Motor Car Manufacturers' Association has been fixed to occur in Chicago on Wednesday, December 4. It will be held in the New Southern Hotel, which is convenient to the Coliseum.

THE DEATH OF GEOROE H. DAY

The End Came Suddenly at Daytona—His Busy Career and His Large Place in Automobile History.

George H. Day, who played such mighty parts in the founding and upbuilding of the automobile industry, passed into eternal rest on Thursday morning last, 21st inst. His death occurred suddenly at Daytona, Fla., whither he had gone in quest of health, and while his ailment, heart trouble, was of long standing and was of a nature that many of his friends feared would terminate without warning, the news of Mr. Day's death nevertheless proved a profound shock. He was much in evidence during the Madison Square Garden show in New York early this month, and to outward appearance was in good health. Almost immediately thereafter, however, he suffered an attack and went South, accompanied by two of his sons.

George Herbert Day was born in Brooklyn, Conn., April 3, 1851, his family for four generations having lived in the Quinebaugh valley in that State, the village of Dayville taking its name from his great grandfather. He received such common school education as his native town afforded and afterwards entered Hobart College, Geneva, N. Y., but in the latter part of 1869 was obliged to give up his studies because of an affection of his eyes. In October, 1870, he went to Hartford and entered the employ of the Charter Oak Life Insurance Co. as a clerk, and remained with that company for seven years. He resigned in 1877 to form a connection with the Weed Sewing Machine Co., which, after a boom period, was then struggling against adverse conditions. At about that time Col. Albert A. Pope had become interested in bicycles, and in the following year, having convinced himself that there was a future for bicycles of American man-

(Continued on page 475)

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THE WEEK'S INCORPORATIONS.

Detroit, Mich.—Grant Automobile Co., under Michigan laws, with $10,000 capital.

Allentown, Pa.—Lehigh Valley Motor Car Co., under Pennsylvania laws, with $10,000 capital. Corporators not named.

Boston, Mass.—Back Bay Garage Co., under Maine laws, with $25,000 capital. Corporators—L. A. Ingalls, president; A. M. Currier, treasurer.

Denver, Colo.—Electric Garage Co., under Colorado laws, with $5,000 capital. Corporators—G. D. Lee, L. S. Sterrett, and L. B. Brown, all of Denver.

Boston, Mass.—Frederick E. Randall Co., under Massachusetts laws, with $25,000 capital; to deal in automobiles. Corporators—Miller A. Dykemann, Herbert F. Croes, and Nellie C. Randall.

Denver, Colo.—Tom Botterill Automobile Co., under Colorado laws, with $50,000 capital. Corporators—Tom Botterill, Frank Botterill, and B. Botterill, all of Denver.

St. Louis, Mo.—St. Louis Auto Exchange, under Missouri laws, with $30,000 capital, fully paid. Corporators—J. E. Brennan, Hugo F. Koch, A. M. Work, and Robert J. Thompson.

New York City, N. Y.—New York Coach & Auto Lamp Co., The, under New York laws, with $2,500 capital. Corporators—Aaron Futterman, Rachel Futterman, and Etta Futterman, 867 East 164th street, New York City.

New York City, N. Y.—Park Avenue Garage, under New York laws, with $125,000 capital. Corporators—William H. Barnard and William H. MacIlroy, 54 Howard street; Edmonds Putney, 2 Rector street, New York City.

Brooklyn, N. Y.—Greenpoint Auto School, under New York laws, with $6,000 capital. Corporators—Clinton D. Anquinos, 177 Nassau street; Charles Miller, 890 Metropolitan avenue; and Joseph Allspach, 160 Meeker avenue, Brooklyn.

New York City, N. Y.—Marion-Overland Automobile Co., under New York laws, with $15,000 capital. Corporators—George W. Garland, Jr., and Albert L. Martin, 1875 Broadway; George P. Strobel, 262 West Ninety-first street, New York City.

New York City, N. Y.—Fleur De Lis Automobile Co., under New York laws, with $25,000 capital. Corporators—Fred Knowlton, 638 East 139th street; Edgar A. Momfort, 1350 St. Nicholas avenue; and Edward D. Cronin, 277 Vanderbilt avenue, Brooklyn.

New York City, N. Y.—Recometer Company of America, under New York laws, with $300,000 capital; to manufacture speed indicating devices. Corporators—Frank W. Waggoner and Frank E. Sarstarphen, 253 Broadway, and Daniel M. Miers, Hasbrouck Heights, N. J.

New York City, N. Y.—George F. Ryan Mfg. Co., under New York laws, with $5,000 capital; to make automobile supplies. Corporators—Fred Knowlton, 638 East 139th street; Edgar A. Montfort, 1350 St. Nicholas avenue, New York City; Edward O. Cronin, 277 Vanderbilt avenue, Brooklyn.

Chalmers Enters Thomas Affairs.

Having purchased a large stock interest in the corporation, Hugh Chalmers, formerly vice-president and general manager of the National Cash Register Co., Dayton, Ohio, has been elected president of the E.



HUGH CHALMERS

R. Thomas Detroit Co. He assumes the duties on December 1st.

E. R. Thomas, of Buffalo, retains his stock holdings and his membership on the board of directors, and in no way loses his identity with the organization. The product will continue to be marketed by the E. R. Thomas Motor Co., of Buffalo.

Mr. Chalmers makes his entry into the automobile industry preceded by a proud reputation. He advanced from the humble position of office boy to that of general manager of the Cash Register Co.—from a salary of less than $5 per week to one of $5,000 per year, every bit of it due to his own efforts. He is credited with being the man who really is responsible for most of the system and other things which have served to make the National cash register concern world famous. He is said to be both forceful and incisive; a lightning thinker and as quick to act. He does not brook incompetency in any form. He has the habit of demanding Why? when things do not go right, and the man who fails to answer it satisfactorily must go elsewhere. It follows that Mr. Chalmers should prove a very vital factor in the automobile business.

IN THE RETAIL WORLD.

Fred J. Pardee, who has the Chicago agency for the Brush runabout, has opened a sales room at 1229 Michigan avenue.

Arlington, Cal., now has an automobile supply and repair shop. R. D. Woodward and C. G. Johnson opened in the Davidson building last week.

Nicholas J. Redmond has opened a garage at 808-814 South Kenzie avenue, Chicago. A general garage and renting business will be done.

A two-story brick garage to cost $8,500 will be erected by the Indianapolis Motor Car Co. It will be located at 419-423 East Market street, Indianapolis.

C. R. Johnson has sold his interest in the Bruick-Johnson Automobile Co., Grand Rapids, Mich., to George Waller. The business will be continued under the old name.

The Cuyahoga Motor Car Co., Cleveland, will erect a new garage at 1054 Euclid avenue. It will be one story high, 45x130 feet. Concrete building blocks will enter into its construction.

The Akron Auto Garage Co., moved into its new garage on East Buchtel avenue, Akron, last week. The building is constructed of concrete, and measures 70x150 feet.

The Northwestern Cadillac Co., now located at 316-322 Fourth avenue south, Minneapolis, will change its location on December 1st. The new home will be at 316-322 Fifth avenue south, where much greater room is to be had.

Reorganization of the Iowa Auto & Tire Co., of Davenport, has been effected by a transfer of stock. The new officers and directors are: President, G. F. Burmeister; vice-president, F. Jungohann; secretary-treasurer, Walter Preister.

The Cleveland Automobile Dealers' Association elected officers last week as follows: President, W. D. Price; vice-president, F. W. Phillips; secretary, Bert Adams; treasurer, H. S. Moore; directors, F. W. Phillips, Bert Adams, George S. Waite, C. M. Brockway, and W. D. Price.

The Buck Auto Carriage & Impiement Co., has not moved from Davenport to Des Moines, Iowa, as stated in a recent issue of the Motor World. It develops that the company has bought out the Goodwin Garage at Des Moines, and has established a branch there, the capital city affording a more central location for the State. The main office will remain in Davenport.

The Algonquin Motor Car Co., with Arthur E. Adams as manager and W. F. McQuillan as treasurer, has been formed to succeed the Henshaw Motor Car Co., as the Boston representatives of the Oldsmobile and Columbus electric. The new company will take over the store occupied by the Henshaw company at 97 Massachusetts avenue. Adams has had wide experience in the automobile field, having been connected with the trade for seven years.

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DUNLOP DECLARES 100 PER CENT

Explanation of this Large "Melon Cutting —It Raises the Expectations of Britons Concerning Big Profits.

British investors are active traders in the stock of automobile companies and allied concerns, and are now eagerly awaiting the annual fiscal reports which will show the results of the year's activity and announce the dividends. A dividend of 100 per cent. to the stockholders in a subsidiary concern of the big Dunlop Pneumatic Tyre Co., has for some unexplained reason created expectation of big dividend announcements from the motor car makers, and a generally optimistic feeling prevails on the strength of it. The 100 per cent. dividend, however, went principally to the Dunlop Pneumatic Tyre Co., and such of its shareholders as took stock in the prosperous subsidiary company, and the report for the latter shows how remote is its relation to what may be expected from the complete car manufacturers.

The Dunlop Rubber Co., Ltd., which constitutes the manufacturing division of the Dunlop Pneumatic Tyre Co., discloses for the fiscal year of 1907 a profit of £300,058 as against a profit of £209,969 for 1906, an increase of £90,089, so that the dividend to the shareholders is raised from 82.47 per cent. to 100 per cent. The company's capitalization is 220,000 shares at £1 each, of which shares the Dunlop Pneumatic Tyre Co. owns 181,881, while individual stockholders in the tire company bought the remaining 38,119 Rubber company shares last March at six times their par value, or £6 per share. The net return to the individual stockholders who thus bought at a premium is therefore 16⅔ per cent. on the 100 per cent. dividend basis. In fact it is even a little better than this by reason of the fact that on allotment the purchasers of this stock were required to pay only two-thirds of the purchase price and the remaining third three months later, while the dividend applies from the time of allotment. The showing is so satisfactory that a proposal to give the directors of the company a commission of 2½ per cent. each out of the £5 premium on the 38,119 shares sold to the individual stockholders, was ratified with considerable enthusiasm by the latter at a mass meeting.

Topics for the Chicago Conference.

Standardization of automobile bodies, cooperation between the automobile engineers and the body builders, and the reduction of weight and the proper wheel base for a practical car, are three of the important subjects that are scheduled for discussion at the Chicago meeting of the Mechanical Branch of the Association of Licensed Automobile Manufacturers, which will be held during the Chicago show. Some of the leading body builders of the country will be represented at the meeting and the engineers will endeavor to get their views on how far standardization is possible and to what degree co-operation between the body builders and the engineers may be carried. The meeting will be held at the Chicago Athletic Club, as was the meeting last year. After their official business is over the members of the Mechanical Branch will visit the show in a body for an inspection of the cars on display.

Continental Apportions More Territory.

The Continental Caoutchouc Co. have added two more distributing agencies to their list, viz.: The Plant Rubber Company, Minneapolis, Minn., who will cover Minnesota, South Dakota, North Dakota, Montana and Wyoming, and the Neustadt Auto & Supply Company, St. Louis, Mo., who will act as distributing agents for Eastern Missouri, Oklahoma, Arkansas and Indian Territory.

To Make Accessories in Newark.

The Hydro Carbon Machine Co., a recently incorporated concern, will shortly establish a plant for the manufacture of automobile and motor boat accessories at 431-433 Bloomfield avenue, Newark, N. J. The officers of the company are W. H. Van Alstine, president; J. H. Market, vice-president and treasurer, and Alexander W. Ostler, secretary and general manager.

Maxim Designs a New Phaeton.

It has become known that the car which will be built by Hiram Percy Maxim, former chief engineer of the Electric Vehicle Co., and T. W. Goodridge, former general manager of the Studebaker Automobile Co., who "doubled up" for the purpose, will be a light electric Victoria phaeton. It is said to incorporate several departures.

Michelin Brings Out an "Air Bottle."

A new compressed air tank or "air bottle" as it is called, for use in inflating tires, has been brought out by the Michelin Tire Co. This "air bottle" weighs less than 9 pounds and contains 450 litres of air, compressed to 150 atmospheres, which is sufficient to completely inflate 8 to 10 large tires.

Wahoo Protection for Tires.

Dr. J. G. Smith, of Wahoo, Neb., who has invented an automobile tire protector, has organized a company for its manufacture. A number of Wahoo's "leading citizens" are interested in the venture, Thomas Killian being president of the company, and Dr. Smith himself vice-president.

Two Factories Working Overtime.

There has been no let-up of activity at the factories of the Dayton Motor Car Co., and the Premier Motor Mfg. Co. Both plants are working 24 hours per day.

NOT AFRAID OF AN INVASION

British Editor Stirred by Suggestion of American Competition in Europe—He Sees no Chance for Its Success.

Accounts of the suggested European invasion by the American Motor Car Manufacturers' Association having been cabled abroad, the foreign editors make haste to explain to their readers that it is either a journalistic hoax or a rash and ill-advised proposal which they need not fear in any degree. With smug self-satisfaction and congratulations they recite with what security the manufacturers on the other side have made the local markets proof against American competition.

Al Reeves, the general manager of the Association, having wired as to his safe arrival on the other side in connection with his mission of looking over the field, may be expected to dissolve by his presence the impression that the project is entirely a journalistic invention. The contention of the foreign press that, if serious, the movement is doomed to failure remains.

In that delightful, unabashed, first person singular style which is in such favor among English trade papers, the editor of a prominent automobile weekly sums up the situation in Great Britain, as follows: "I do not say in any levity or real cheerfulness of spirit, but with thankfulness that the British motor trade has been allowed to secure a command of its own market, which no American invasion can now greatly affect. Had the fray come a year ago even, it would have been serious, but to-day our market is so roped in, so closely and enterprisingly covered by our own and the manufacturers of the Continent, that I cannot conceive how these new American raiders are going to win a trade success save by patient and expensive enterprise. We have with us as successful trading propositions at the moment, the White, Cadillac, and Ford cars, from the States. Those who have run these ventures and have won for them their present positions, know what they will have to do to secure a footing on the British market. It is, I suppose, a case of 'needs must when the devil drives,' but many an hour's hard work, many a dollar well spent, will have to be devoted to the task ere the American manufacturer can hope to force a sale for his wares in this country."

Shoemaker to be Receiver's Manager.

C. C. Shoemaker, president of the concern, has been appointed manager for the receiver of the Shoemaker Automobile Co., Elkhart, Ind. He displaces W. E. Johnson, secretary of the company, who first had been named for the position. Shoemaker expects that the receivership will be terminated in about two weeks.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, Pres. R. G. Betts, Treas.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞ Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, NOVEMBER 28, 1907

GEORGE HERBERT DAY.

Although it is inevitable, whenever a leader is cut down, it is cause for sorrow. When such a leader as George Herbert Day is cut down, "sorrow" is a word too poor for adequate expression. He was a good friend, a poor enemy. His triumphs were many and always were they triumphs that added to the world's advance. His wisdom was sound and far seeing; his talents always constructive. No man acted larger parts in the automobile industry or acted them so unobstrusively or so unaffectedly. He earned respect—he commanded admiration by deserving it. No man has left a deeper impress on the industry. His loss is its loss.

Clearing Away the Fog.

In addition to being a very large and a very beautiful exhibition, the Chicago show will be a thoroughly happy function—if the urging of the management is taken to heart. The manager has issued an appeal to all prospective exhibitors to leave their troubles, real or fancied, at home, and to bring only smiling faces to Chicago. Says this appeal:

"There were too many wet blankets at the New York shows; too many complaints that there was no business in sight; too much talk about that popular idiocy, 'the money panic'; too free expressions of doubt real or feigned, whether So-and-So would be able to pull through the season; too much pessimism; too much 'knocking'—not only of individual concerns, but of the industry as a whole. . . .

"The Chicago show wants optimists, not pessimists; "boosters," not croakers; pleasant faces, not sighs and regrets.

"There is no money panic in Chicago; but for the newspaper reports of the doings of Wall Street, Chicago would long ago have forgotten that there had been so much as a ripple. And the great West, about which the East knows so little, is fairly bulging with prosperity. . . .

"Let us banish the thought that there is anything the matter with the automobile business."

The appeal, of course, is based on the laugh-and-the-world-laughs-with-you belief, and while it is somewhat overdrawn, it is in the main a laudable effort. The old saw to the contrary notwithstanding, that weepings beget weepings, was never better illustrated than by the very conditions which gave rise to the Chicago appeal. It is a fact that at every large gathering during recent months the tongue of gossip has wagged most vigorously. There has been too much "comparing of notes" and questioning of credits to serve good purposes. These gatherings invariably have been followed by rumors of troubles which never have materialized, and in at least one conspicuous instance, those most concerned directly attribute the crisis in their company's affairs to a well attended meeting of tradesmen at which so many notes were compared, and where whisperings were so general that the mischief done could not be checked.

As very many men in business have reason to know, the so-called "money panic" is not altogether a "popular idiocy." Panic is scarcely a proper word to apply to it, but that it is a time for conservatism and a readjustment of affairs is plain to every thoughtful man, and every man of that type is safeguarding, or has safeguarded his interests accordingly. It does no harm to the automobile business nor to any concern of standing in the business to say that it has been overdone. It has exceeded the speed limit, so to speak. The fact is obvious and public admission of the truth will serve to clear away some of the fog and to explain the tongue-wagging that has caused much of the fog. It profits none to chase rainbows. The fact is equally clear that the automobile industry has not been affected more than other industries have been affected, and that there is no more danger of it going to the dogs than there is danger of other industries going the same way. It will be all the better—all the stronger for the readjustment.

This is the irrefutable situation as it exists, and is the view that should be spread broadcast; it will do more to increase respect and to check the idle tongue of gossip than all the simple faith cures that may be applied.

There is nothing the matter with the automobile business itself. There has been something the matter with some of those engaged in it, and the reasons therefor are not hard to discover.

Bodies and Body Builders.

During the brief period which has elapsed since the construction of the chassis has been such as to permit of the independent fabrication of suitable bodywork, small change has been made in the spirit with which that task has been undertaken. That is to say, the automobile body, however much the principles of the coach building industry have been infused into it, yet is designed and built distinctly and directly for the automobile. A recent proposal indicates indirectly the desirability, and even the future necessity of designing the chassis to fit the body. Furthermore, since the suggestion comes from no less a source than a well-known journal of the carriage trade, it is to be regarded not only as plausible, but as having direct bearing on the eagerness of the carriage builder to absorb as great a portion of the automobile melon as he is permitted to take. Hitherto, his portion has been chiefly rind. His desire to dip into the pulp as well is not only pardonable, but to be expected, since he has a certain legiti-

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mate right to at least such portion of it as relates to the production of that which is purely carriage work.

The suggestion referred to has to do more particularly with cars of the town type in which the drop frame is used in order to lower the flooring of the passenger section of the vehicle, largely for purposes of convenience in entering. Says the journal in question:

"The drop and rear end was made a necessity when the high rear wheels were adopted, but the latest method is the double drop chassis, which carries with it the necessity of designing the body first and making the drop curve of the chassis to suit the bottom curve or sills of the body. The straight chassis and straight sill body embodied such similarity as made it impossible to make but very few changes in outlines. For this reason so many touring cars seem to be built over the same model, but the double drop chassis will change this somewhat, as different curves may be adopted to suit the styles of the different bodies, and will be quite a change from the straight line chassis and body."

Nor is the idea lacking in wisdom, although its presentation carries a subtle suggestion that the body maker may ultimately become of more than subsidiary importance to the automobile industry. The actual construction of chassis lines in accordance with body specifications evidently is applicable only to a limited extent. Absolute interchangeability between chassis and bodies of certain plan dimensions, is most desirable and any movement tending to further this ideal should be acceptable to all who are connected with the vehicle trade in any way. For certain de luxe types of passenger vehicle, however, this reversed sequence of design would appear to have its advantages.

In fact, it will not be long before either some definite settlement of the body builders' status in the automobile industry will have to be arrived at, or open warfare declared. The excellence of the carriage maker's product as applied to the automobile is not to be questioned; he is not accustomed to occupying a subsidiary position; he demands open recognition for his labors, and rightfully. Yet whether he shall continue to work subordinate to the maker of the mechanical portions of the automobile, whether the two shall share an equally significant relationship, or whether the carriage maker shall succeed to a mastery of the marketing situation, are questions which must be decided in good time, and about the settlement of which must hinge in large measure the final status of the industry.

The Demand and the Supply.

It is not to be questioned that automobiles have become a necessity to the world at large, but more especially to the world at home. People have reached a point where they actually feel the need of motor propelled vehicles. The feeling is spreading, and not all the extravagantly planned and executed cars, not all the wild misuse of the highways by reckless drivers, nor costly lessons in maintenance and upkeep, can check the growth of the sentiment that the motor vehicle is a useful and sometimes a necessary means of transportation.

Here-is a man who drives a crude carriage-like contrivance, plainly of domestic manufacture. In extenuation of its existence, he explains that after his horse died he was left with the phaeton on his hands, and also a two and a half horsepower motor which had been used for another purpose, but which then lay idle. The mechanic's instinct taught him to combine the two in some way for economy's sake—because the horse was dead. Actually, he was possessed of that respect for mechanical propulsion, which has led some more foolish individuals to invest in three thousand dollar cars, when their incomes and requirements only warranted a five hundred dollar expenditure. His inborn economy, however, prevented his giving heed to the impulse until after the equine obstacle was removed from his path.

Here also, are makers catering to such a sentiment, which is not peculiar to this one man, and offering to market parts for converting buggies into automobiles. The thing sounds ridiculous, but it has a solid basis, since it provides for an economical transformation from animal to mechanical propulsion. The motor buggy makers stand next in logical order, and next to them, the makers of light and inexpensive runabouts and commercial vehicles. The makers of cars of larger pretensions, cater to a less extensive and more temporal demand, as the qualities of power and speed, and cost increase.

The automobile market is an accomplished fact. In some quarters, it is nascent, to be sure, while in others it has been overdone. But everywhere there is a demand. Where there is a demand, as where there is a vacuum, there must be an equal supply. The laws of the universe forbid with equal insistency the excess, as well as the paucity of the counteracting influence. Things must equalize, in business as well as physics. What profit or what loss arise from the effort to fulfill a demand, may be counted to the credit or otherwise, of the forces underlying the supply.

The automobile market is a reliable, growing factor in the world of real business. What gain the industry extracts from it, however, depends solely upon the industry itself, and the wisdom with which it is molded to cover the market and nourish or restrain it to the best interests of progress.

COMING EVENTS

November 28, Wilmington, N. C.—Automobile races on Wrightsville beach.

November 28, Riverside, Cal.—Annual hill climbing contest on Box Springs hill.

November 30-December 7, Chicago—National Association Automobile Manufacturers' first annual exhibition of commercial motor vehicles in 7th Regiment Armory.

November 30-December 7, Chicago—National Association Automobile Manufacturers' Annual show in Coliseum and First Regiment Armory.

December 9-14, Detroit, Mich.—Detroit Automobile Dealers' Association show at Wolff's pavilion.

December 14-21, St. Louis, Mo.—St. Louis Manufacturers' and Dealers' second annual show in Jai Alai building.

January 14-18, Hartford, Conn.—Hartford Automobile Dealers' Association's annual show in Foot Guard Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sportsmen's Association's show in Light Guard Armory.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's show.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association show in Duquesne Garden.

It is of passing interest to note that a race for "gentlemen amateurs" will form a feature of the Florida carnival. It is to be hoped that some one will now arise and define that type of amateur. We presume, of course, that he is the sort who lives on wealth for which his father labored and to whom real work is repulsive; but if he has competed for cash or against a professional who has soiled his hands by labor, can he be either or both an amateur o ra gentleman?

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DEATH OF GEORGE H. DAY.

(Continued from page 269)

ufacture, he turned to the Weed company, whose condition was such that they accepted and executed a small order for Columbia bicycles. In this way Mr. Day and Col. Pope were first brought together. The former thus ranks as one of the founders of the bicycle industry. He soon became imbued with Col. Pope's faith and enthusiasm and urged that the Weed plant be turned from sewing machines to bicycles. In 1879 he was elected secretary of the Weed company and thereafter his influence became more potent.

Each succeeding year bicycles formed an increasing part of the company's product, and with the enlarging demand the Pope Mfg. Co. acquired larger and still larger blocks of the Weed stock, until in 1890 it took over the entire property. Meanwhile, Day had become president and general manager of the Weed Sewing Machine Co., and when it was absorbed by the Pope Mfg. Co., Mr. Day went with it, being elected president and general manager of the latter concern. He held those offices and the close association with Col. Pope, formed in 1878, continued for twenty-two years or until 1900, when the compressing processes of the American Bicycle Co., more correctly termed the Bicycle Trust, with which the Pope Mfg. Co. had been merged, served to sever the business relationship of the two men.

During the long span of time Mr. Day had seen the bicycle industry grow from a tiny acorn to the mighty oak that spread its branches from ocean to ocean and beyond. The names Pope and Columbia had become household words; the Pope plant had become the greatest of Hartford's many industrial establishments, and one of the greatest in the world. It included not merely two immense factories for the building of bicycles, but a steel tube mill and a tire plant, for the Hartford Rubber Works then was a Pope possession, and a factory for the manufacture of automobiles.

It was while Mr. Day was at the head of the Electric Vehicle Co. that the company purchased the now famous Selden patent, with which the name Day ever will be associated. On and around it he built what many consider his greatest monument, the Association of Licensed Automobile Manufacturers, of which he was the general manager until early in the present year. In effecting its organization, he performed the heroic task of smoothing all differences and conflicting views, of inducing recognition of the patent and payment of royalty, and sharing of business experiences and confidences, and of generally making real and earnest what may be termed a community of interest on the part of nearly all of the leading and rival, and therefore more or less jealous manufacturers of the time, such as few, if any, industries have known. In many respects the A. L. A. M. stands as the ideal commercial organization, and it was brought into being in 1903 in a manner characteristic of Day—without fuss, feathers or flourishes. It was formed and well knit almost before the trade at large was aware that such a movement was under way or realized its scope. The perception and the patience and diplomacy required to perform such an achievement also were typical of Mr. Day, as his creative and directive genius is further exemplified by the gradual development of the successive departments of the A. L. A. M., each with a well defined and useful purpose.



GEORGE HERBERT DAY

His ailment giving warning that his health required more attention, Mr. Day resigned as manager of the A. L. A. M. early this year, and soon after, he went to Florida where he remained several months. When he returned he projected a visit to Europe, but that was abandoned and he spent most of his time at his summer home in Fenwick, Conn., with only occasional dips into business. His counsel was of such value, however, and he was so interested in its work, that only this month he permitted himself to be elected a member of the A. L. A. M. executive committee.

The industries with which he had been identified having done much to build up and add to the growth and importance of Hartford, it follows that Mr. Day was held in high esteem in that city. He was one of the originators of the Board of Trade, but the only semi-public offices which he held were those of park commissioner, and, by designation of the governor, a manager of the Connecticut World's Fair fund in 1893. At the time of his death he was a director or trustee of three Hartford banks and of two insurance companies. He was a vestryman of the Church of the Good Shepherd, but practically the only club of which he was a member was the Engineers' Club of New York.

In 1877 Mr. Day married Miss Katharine Beach, daughter of the then president of the Weed Sewing Machine Co., who, with five children survives him.

Mr. Day's remains were brought from Florida and interred in Cedar Hill Cemetery, Hartford, on Monday last. His funeral was impressive and was attended by a multitude that attested the regard in which he was held. The floral tributes practically overflowed his late residence. As a mark of respect the Pope and Electric Vehicle factories and that of the Underwood Typewriter Co., of which he was a director, suspended operations for the afternoon.

Among those who attended the funeral were Messrs. Charles Clifton, S. T. Davis, Jr., and Thomas Henderson, of the A. L. A. M. executive committee; M. J. Budlong, who succeeded Mr. Day as president of the Electric Vehicle Co., and now fills his chair as general manager of the A. L. A. M.; E. H. Cutler, Mr. Day's immediate successor in the latter office; Albert L. Pope, Charles E. and Wilbur F. Walker, of the Pope Mfg. Co.; J. B. Entz and H. W. Kyte, of the Electric Vehicle Co., and George B. and H. R. Selden.

As his achievements in two revolutionizing commercial movements, here briefly recounted, serve to indicate, Mr. Day was a real captain of industry. He shaped the plans and directed the operations rather than marched, with plumes waving, at the head of the procession, and that his every campaign was marked by impressive success, gives the true measure of the man and of his capacity. If he was dignified he was democratic; there was not a trace of bumptiousness in his make-up. If he was reserved, he was both cordial and consid-

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erate. If he did not project himself, he did not hold himself aloof. He was always accessible and his handclasp was warm and his tone kindly. He was the sort of man that won confidences. He had to deal with many men—not a few of them inventive cranks—and it is a tribute to his memory that some of the humblest of them were warmest in his praise. He was so gifted that it often was said of him that figuratively he could "kick a man downstairs" so kindly that he man would praise him for the compliment bestowed. Also was he a keen judge of men and if the roll were called of those who won their spurs in the cycle trade or who to-day figure high in the automobile industry, it would be found that the number of them is not small who must bear witness to the helpfulness of the hand of George Herbert Day.

Hill Climbing Car Falls 500 Feet.

Few entries, due to insufficient preliminary advertising, caused the Witter hill climb at Witter Springs, Cal., on Saturday, 16th inst., to be somewhat of a failure. Two accidents further marred the meet. The worst accident was when J. A. Nikrent's Tourist skidded off a dangerous turn and toppled over a 500-foot embankment. The car landed bottom up in a creek below, a mass of wreckage. The driver saved himself by jumping. The second accident was only a minor mishap. When the Lambert car was running fifteen seconds ahead of record time a chain came off, bringing the car to a stop. It was quickly readjusted but the race was lost. Nickrent's accident happened in a special match race, which was won by Frank Murray, Peerless, who climbed the 2⅝-mile hill in 6 minutes 21½ seconds. Driving a Buick in the free-for-all Murray won handily in 6:26. Frank Hill, Peerless, was second, and J. W. Dearup, Lambert, third.

Wildwood Planning a Banked Track.

Success of its two race meets held last summer has prompted the Motor Club of Wildwood, N. J., to talk of building a banked mile track to be used exclusively for automobile racing. The local Board of Trade is said to be interested in the project, for the reason that an automobile track will perhaps bring people to the seaside resort. A real estate company has donated a tract of land just west of Wildwood proper as a site for the proposed track and a preliminary survey has been made for a direct automobile roadway leading from the main highway from Philadelphia to the course. It is stated that work will be started at once.

All the incumbent officers of the Bay State Automobile Association were re-elected at the annual meeting held in Boston last week. They are: President, Elliot C. Lee; vice-president, James P. Coghlin; treasurer, J. C. Kerrison; secretary, James Fortescue.

A. C. A. TAKES A HAND IN FLORIDA

It Will Manage This Winter's "Sandfest"—Forecast of Events that are to Make up the Card.

There will be a Florida beach carnival this winter, after all. The Automobile Club of America unexpectedly announced late last week that at a meeting of its directors it was decided to accept the invitation of the Florida East Coast Automobile Association, composed of W. J. Morgan, the New York promoter, and the Florida hotel and railway men who derive most of the benefits from the meet, and take a hand in managing the annual sandfest.

The past five tournaments on the Florida beach have been conducted by the Florida East Coast A. A., which association, in view of the fact that last year's meet was a lamentable fizzle, doubtless realized that it scarcely could hope to promote another tournament without the aid of some powerful organization; hence the solicitation of the Automobile Club of America to manage the meet. The date of the meet has not been decided, but probably will be in March, and the program has been left to the contest committee of the New York club, of which Robert Lee Morrell is chairman. It is stated that three long distance events will take place, one for gentlemen amateur drivers, one for strictly racing cars, and one for stock cars. To prevent the appearance of freak racing cars in the mile-a-minute and two-miles-a-minute classes, the committee states that the entrants will be compelled to qualify for their events by going at least twenty miles at a minimum speed of about 45 seconds to the mile.

Only $10 for Parkway Speeding.

Offenses of exceeding the speed limit of New York City, when committed in driveways under the control of the Park Commission come under the jurisdiction of the police court magistrates, and that such cases need not be sent to the Court of Special Sessions, notwithstanding a recent ruling of the Appellate Division, was the substance of a decision rendered in the West Side Court, last week, by Magistrate Walsh. It means that while arrests made in other parts of the city may entail fines up to $100, those made in the parks or on the parkways will be limited to a maximum of $10.

The point in regard to the parkways was raised in a brief submitted by Clarence K. McGuire, an attorney, in a previous examination of the defendant, Hugh Fentie, of No. 313 West Forty-seventh street, a chauffeur who was arrested on November 8 for speeding an automobile in Riverside Drive between Seventy-fourth and Seventy-fifth streets. The defendant's attorney desired to bring the case under the jurisdiction of the police court magistrate because the penalty for the violation of the park ordinance is lighter than for violation of the State Motor Vehicle law, and imprisonment does not follow repeated offenses.

Magistrate Walsh made the following memorandum on his decision:—

"Riverside Drive is conceded to be a parkway. It is provided by subdivision 4 of section 3 of the Motor Vehicle law that authorities may enforce rules concerning the speed of motor vehicles in parkways if signs are erected indicating the rate of speed permitted. It is conceded that such signs are on the parkway. That being the fact, I believe the park ordinances are in force, and the offenses thereunder are punishable in the Magistrate's court. The present complaint not charging a violation of the park ordinance, but a violation of the Motor Vehicle law, which is not operative, this complaint must be dismissed, and a new complaint may be drawn covering the violation of the park ordinance which is punishable by this court."

Hotchkiss Appoints Committee Heads.

President William H. Hotchkiss of the American Automobile Association, has announced his appointments to the chairmanships of the various boards for the coming year. The boards have been increased from four to six, the new ones being the Technical and Publication boards The former chairmen are all re-appointees, and are as follows: Legislative, Charles Thaddeus Terry, New York City; Good Roads, Robert P. Hopper, Philadelphia; Touring, Frank B. Hower, Buffalo; Racing, Jefferson DeMont Thompson, New York City; Of the Technical board, N. H. Van Sicklen, Chicago, is chairman, and of Publications, A. G. Batchelder, New York City. The chairmen of these boards will select their committee members, who will be approved by the directors at the next meeting to be held in Chicago preceding the show.

Automobilists' Rights on Turnpikes.

The Laurel Run Turnpike Company, which maintains several roads in the vicinity of Walkes-Barre, Pa., has been made the defendant in a suit brought against it by W. W. Scranton, which will be of interest to all automobilists who have occasion to drive around the Diamond City. The Laurel Run Company has never permitted automobiles to travel over its roads. A few weeks ago Scranton attempted to drive his car over one of the roads, but was held up at a toll gate by the keeper, armed with an axe. Scranton then brought suit against the company to compel it to open the road to automobiles, contending it was a public highway, and automobiles therefore could not legally be barred from it.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

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The Chicago Show; What It Will Present

The Chicago show, which this year opens its doors on Saturday next, 30th inst., always has been a much larger show than the average easterner supposes to be the case, and last year, at least, a much handsomer one.

The promoters love to style it "the national show," and, of course, there is some excuse for it. Nominally, at least, it is conducted by the National Association of Licensed Automobile Manufacturers, and the question of Selden license or the lack thereof does not enter into its affairs. For the nonce, Seldenites and "independents" lose sight of the patent that marks the line of demarcation, and exhibit their cars side by side.

Whether or not it is truly "the" national show, there is every promise that the forthcoming show will be not only a larger one than any of its predecessors, but a more beautiful one to look upon. Three buildings—the Coliseum, the First Regiment Armory, and the Seventh Regiment Armory—instead of two, will be required to house it, and one of the armories will be given over wholly for a display of commercial vehicles. The trappings will include 142 oil paintings of motoring scenes, of which 112 will form the backgrounds of the booths. The others will encircle the Coliseum around the gallery front. There will be snow white arches of staff and statuettes of the same material.

What Chicago loses is due to the priority of the two New York shows, which may be said to have absorbed the element of novelty. It will be in the nature of an old story to those who a month and more ago viewed the exhibits in Grand Central Palace and Madison Square Garden, for with very few exceptions the makers whose names are headliners in the industry, already have displayed their wares at one or the other of those functions. As a result, except in the spectacular sense, the student of shows does not expect to be thrilled by new or startling developments. Nevertheless, of the 117 names of car manufacturers listed on the Chicago program, no less than



ONE OF THE EMBLEMATIC STATUETTES

23 will be new to the show this season, even to New Yorkers. Most of them will be indigenous to the western portion of the country, of course, and it is expected that some little individual novelty will be developed among these newcomers.

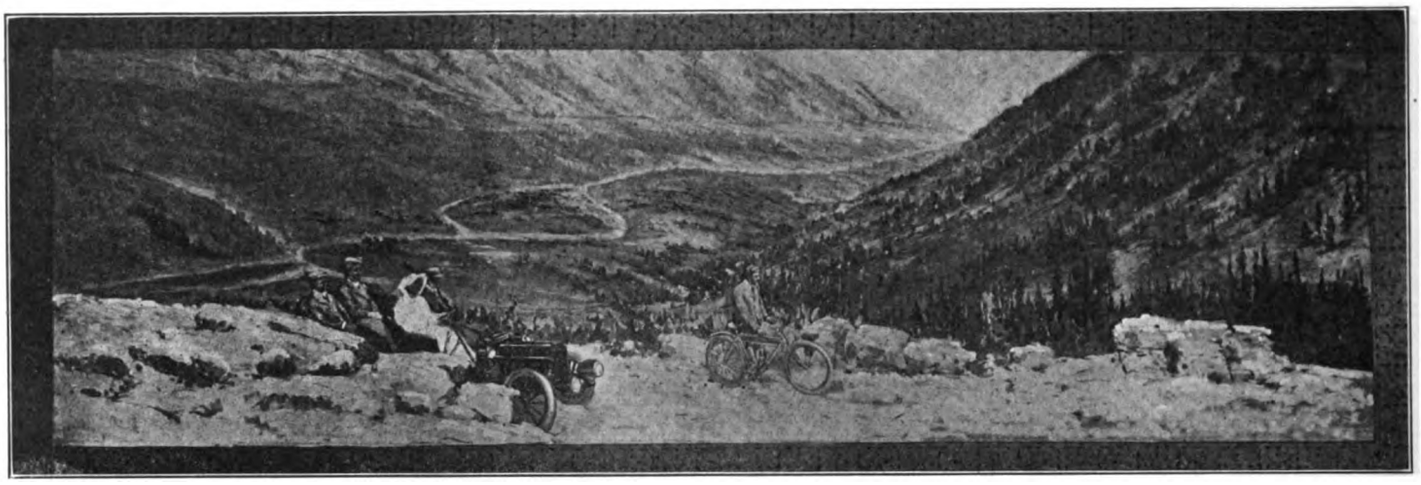
This list includes such cars as the Pungs-Finch, Silent Knight, Gale, Aerocar, Pierce-Racine, Tincher, Queen, Dolson, Auburn, Shoemaker, Diamond T., and Pullman, while the C. I. V., which is a six-cylinder machine, the Cornish-Friedburg, Lauth-Jeurgens, Lorraine and Oakland cars, are among those which have not been shown before, even in Chicago. In addition, the show will house the Rambler and Berliet cars, both of which in New York were staged at "shows" of their own. The lighter types of car—the runabouts and high wheeled buggies, also will be well represented among those vehicles which were not at either New York show, among them being numbered the Duer, Staver, Monarch, Aurora, Bugmobile, and Stratton.

The commercial section, because it is the first tangible realization of what practically the entire industry has been more or less idly predicting for several years as being the one inevitable thing in connection with the development of the motor vehicle, will constitute a very notable feature of the Chicago function. As the first actual and individual exhibit of commercial vehicles, therefore, as well as being a thoroughly representative one, the commercial section is bound to attract a deal of attention from visitors of the thinking sort, if not from the mere show crowd, in the average sense. Practically speaking, it will reveal about all that was seen in its own line at both of the New York exhibitions, and even as much more which was not seen in the metropolis.

Speaking merely of those machines which have not been exhibited already this fall, from the total of 28 exhibitors, these may be reckoned as new: White, Safir, American, Plymouth, Sayers & Scoville, Continental, Coppock, Gifford-Pettit, Streator, Pittsburg, Worth, Lambert, Pope-Hartford, Mitchell, Couple-Gear, and Meiselbach.

In the accessory line, it is usual to expect a number of exhibitors who do not

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DECORATIVE PANEL FOR CHICAGO SHOW, SYMBOLIC OF TOURING

find their way east as far as the coast, and who present more or less that is new and novel in one sense or another. Moreover, forecasting the exhibitors of parts and sundries at the Chicago show has usually been rendered more or less ineffective because of the considerable number of non-appearances of those named on the advance list, as well as the actual appearance of others who came late. This year, the task is rendered still more difficult by the fact that sub-letting of space is permitted, as a result of which it is absolutely impossible to predict how many exhibitors will be visible, or what will be the nature of their product.

According to the list, however, it is made to appear that some 35 of the 180 accessory exhibitors present will be showing their goods for the first time this season. These are: T. Alton Bemus, Warner Clutch Co., Triple Action Spring Co., Duplex Coil Co., Longdin-Brugger Co., Pfanstiehl Eletcrical Laboratory, Vivax Storage Battery Co., Never-Miss Spark Plug Co., Imperial Brass Mfg. Co., R. H. Smith Mfg. Co., Motsinger Device Co., Long Mfg. Co., Ross Gear and Tool Co., Western Maleable Steel Co., Corcoran Lamp Co., Whiteley Steel Co., Limousine Carriage Mfg. Co., Standard Lamp and Mfg. Co., Eugene Arnstein, Franco-American Auto & Supply Co., McKenna Mfg. Co., Standard Varnish Works.

Excelsior Supply Co., Atwood Mfg. Co., Edward Neely & Co., Heitger Carburetter Co., Auto Parts Co., Electrical and Mechanical Development Co., Central Rubbers Co., Vehicle Top and Supply Co., Chicago Wind Shield Co., McCord & Co., Cartier, Chapman & Co., and the Atlas Mfg. Co. Four new types of motorcycles also will be shown, namely the Harley-Davidson, Armac, Manson, and Torpedo.

The complete list of exhibitors, grouped according to general location, follows:

Coliseum—Main Floor.

Packard Motor Car Co., Detroit, Mich.—Packard gasolene cars.

Locomobile Company of America, Bridgeport, Conn.—Locomobile gasolene cars.

Wayne Automobile Co., Detroit, Mich.—Wayne gasolene cars.

Electric Vehicle Co., Hartford, Conn.—Columbia gasolene and electric cars.

Knox Automobile Co., Springfield, Mass.—Knox gasolene cars.

Woods Motor Vehicle Co., Chicago, Ill.—Woods electric cars.

Reo Motor Co., Lansing, Mich.—Reo gasolene cars.

Studebaker Automobile Co., South Bend, Ind.—Studebaker gasolene and electric cars.

E. R. Thomas Motor Co., Buffalo, N. Y.—Thomas gasolene cars.

F. B. Stearns Co., Cleveland, O.—Stearns gasolene cars.

Apperson Bros. Auto Co., Kokomo, Ind.—Apperson gasolene cars.

Northern Motor Car Co., Detroit, Mich.—Northern gasolene cars.

Elmore Mfg. Co., Clyde, O.—Elmore gasolene cars.

Olds Motor Works, Lansing, Mich.—Oldsmobile gasolene cars.

Lozier Motor Co., New York—Lozier gasolene cars.

Dayton Motor Car Co., Dayton, O.—Stoddard-Dayton gasolene cars.

Pope Motor Car Co., Toledo, O—Pope-Toledo gasolene cars.

Pope Mfg. Co., Hartford, Conn.—Pope-Hartford gasolene cars.

H. H. Franklin Mfg. Co., Syracuse, N. Y.—Franklin gasolene cars.

Bartholomew Co., Peoria, Ill.—Glide gasolene cars.

Waltham Mfg. Co., Waltham, Mass.—Waltham-Orient gasolene cars.

Premier Motor Mfg. Co., Indianapolis, Ind.—Premier gasolene cars.

Matheson Motor Car Co., Wilkesbarre, Pa.—Matheson gasolene cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y.—Maxwell gasolene cars.

Geo. N. Pierce Co., Buffalo, N. Y.—Pierce Great Arrow gasolene cars.

White Company, Cleveland, O.—White steam cars.

Stevens-Duryea Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene cars.

Haynes Automobile Company, Kokomo, Ind.—Haynes gasolene cars.

Winton Motor Carriage Co., Cleveland, O.—Winton gasolene cars.

Royal Motor Car Co., Cleveland, O.—Royal Tourist gasolene cars.

Thomas B. Jeffery & Co., Kenosha, Wis.—Rambler gasolene cars.

National Motor Vehicle Co., Indianapolis, Ind.—National gasolene cars.

Babcock Electric Carriage Co., Buffalo, N. Y.—Babcock electric cars.

Mitchell Motor Car Co., Racine, Wis.—Mitchell gasolene cars.

Pungs-Finch Auto & Gas Engine Co., Detroit, Mich.—Pungs-Finch gasolene cars.

Coliseum Annex—First Floor.

Autocar Co., Ardmore, Pa.—Autocar gasolene cars.

Dragon Automobile Co., Philadelphia, Pa.—Dragon gasolene cars.

Baker Motor Vehicle Co., Cleveland, O.—Baker electric cars.

Cadillac Motor Car Co., Detroit, Mich.—Cadillac gasolene cars.

Peerless Motor Car Co., Cleveland, O.—Peerless gasolene cars.

Imperial Motor Car Co., Williamsport, Pa.—Second Imperial gasolene cars.

Welch Motor Car Co., Pontiac, Mich.—Welch gasolene cars.

Peerless Motor Car Co., Cleveland, O.—Peerless gasolene cars.

Corbin Motor Vehicle Corp., New Britain, Conn.—Corbin gasolene cars.

First Regiment Armory—Main Floor.

Buckeye Mfg. Co., Anderson, Ind.—Lambert gasolene cars.

Columbus Buggy Co., Columbus, O.—Columbus electric cars.

Nordyke & Marmon Co., Indianapolis, Ind.—Marmon gasolene cars.

American Locomotive Auto Co., New York.—American Berliet gasolene cars.

Rauch & Lang Carriage Co., Cleveland, O.—R & L. electric cars.

Western Tool Works, Galesburg, Ill.—Gale gasolene cars.

Aerocar Motor Co., Detroit, Mich.—Aerocar gasolene cars.

Gearless Transmission Co., Rochester, N. Y.—Gearless gasolene cars.

Moon Motor Car Co., St. Louis, Mo.—Moon gasolene cars.

Pierce Engine Co., Racine, Wis.—Pierce-Racine gasolene cars.

Tincher Motor Car Co., South Bend, Ind.—Tincher gasolene cars.

Austin Automobile Co., Grand Rapids, Mich.—Austin gasolene cars.

De Luxe Motor Car Co., Detroit, Mich.—De Luxe gasolene cars.

Jackson Automobile Co., Jackson, Mich.—Jackson gasolene cars.

American Motor Car Co., Indianapolis, Ind.—American gasolene cars.

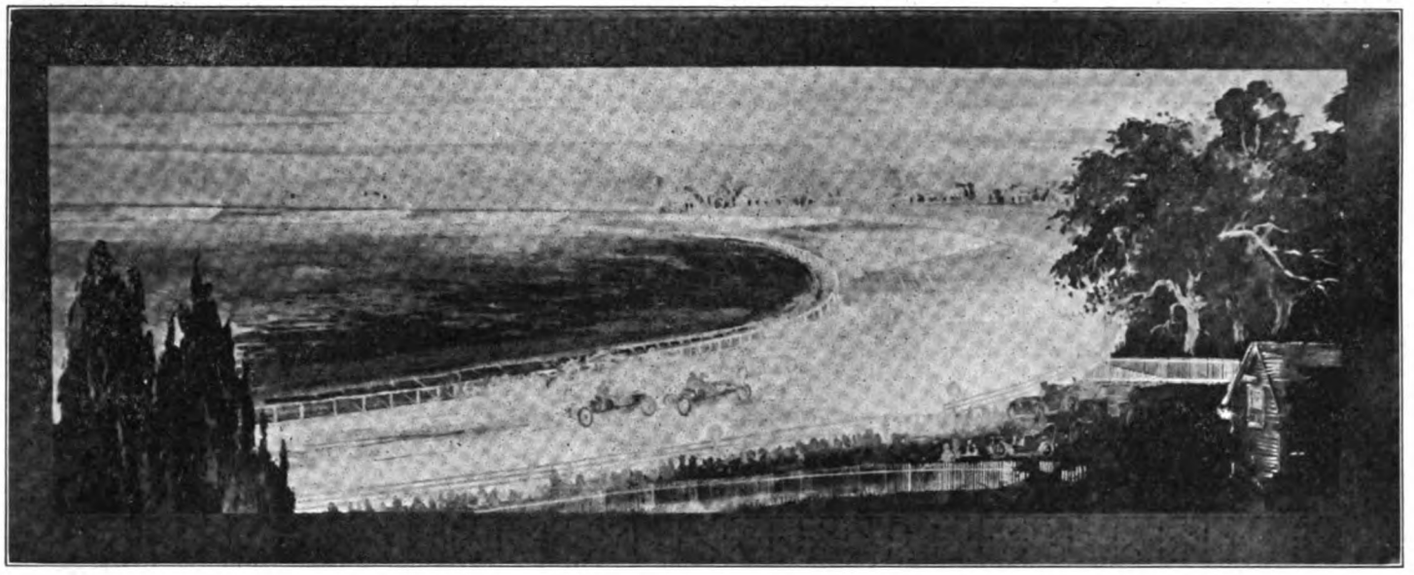
Chicago Coach & Carriage Co., Chicago, Ill.—Duer gasolene buggies.

Staver Carriage Co., Chicago.—Staver gasolene buggies.

Oscar Lear Automobile Co., Springfield, O.—Frayer-Miller gasolene cars.

Dolson Automobile Co., Charlotte, Mich.—Dolson gasolene cars.

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DECORATIVE PANEL FOR CHICAGO SHOW, SYMBOLIC OF SPORT

Acme Motor Car Co., Reading, Pa.—Acme gasolene cars.
Monarch Motor Car Co., Chicago Heights, Ill.—Monarch gasolene cars.
Moline Automobile Co., East Moline, Ill.—Moline gasolene cars.
Auburn Automobile Co., Auburn, Ind.—Auburn gasolene cars.
Diamond T. Auto Co., Chicago.—Diamond T. gasolene cars.
Holsman Automobile Co., Chicago.—Holsman gasolene cars.
Wayne Works, Richmond, Ind.—Richmond gasolene cars.
Rainier Company, New York—Rainier gasolene cars.
Kissell Motor Car Co., Hartford, Wis.—Kissellkar gasolene cars.
Smith Automobile Company, Topeka, Kan.—Great Smith gasolene cars.

Coliseum Basement—Cars.

Bugmobile Co. of America, Chicago.—Gasolene buggies.
Chicago School of Motoring, Chicago.—
Lauth Juergens Motor Car Co., Chicago—
Shoemaker Automobile Co., Freeport, Ill.—Shoemaker gasolene cars.
Schacht Mfg. Co., Cincinnati, O.—Schacht gasolene buggies.
Reliable Dayton Motor Car Co., Chicago.—Reliable Dayton gasolene cars.
Aurora Motor Works, Aurora, Ill.—Aurora gasolene cars.
Lorraine Automobile Mfg. Co., Chicago.
Pullman Motor Car Co., Chicago.—Pullman gasolene cars.
Gaeth Automobile Works, Cleveland, O.—Gaeth gasolene cars.
Hatfield Motor Vehicle Co., Miamisburg, O.—Hatfield gasolene cars.
Atlas Motor Car Co., Springfield, Mass.—Atlas gasolene cars.
Cornish-Friedberg Motor Car Co., Chicago.—Cornish-Friedberg gasolene cars.
C. V. I. Motor Car Co., Jackson, Mich.—C. V. I. gasolene cars.
Oakland Motor Car Co., Pontiac, Mich.—
C. H. Stratton Carriage Co., Pontiac, Mich.

Coliseum Basement—Accessories.

K. W. Ignition Co., Cleveland, O.—K-W magnetos, master vibrators, plugs and ignition system.
C. A. Shaler Co., Waupun, Wis.—Electric vulcanizers.
Norton Company, Worcester, Mass.—Carborundum grinder and emery supplies.
Randall-Faichney Co., Boston, Mass.—Grease pumps and primers.
Auto Goods Co., Boston, Mass.—Supplies.
T. Alton Bemus, Boston, Mass.—Ignition timers.
American Aluminum Coating Co., Pittsbug, Pa.—Aluminum coated steels.
Vehicle Top & Supply Co., St. Louis, Mo.—Tops and supplies.
Roger B. McMullen, Chicago—Frames, axles and parts.
Ovington Motor Company, New York.—Motorcycles.
Automobile Topics, New York City.
Jeffery-Dewitt Co., Newark, N. J.—Spark plugs.
Warner Clutch Co., Chicago.—Clutches.
Triple Action Spring Co., Chicago.—Springs.
Duplex Coil Co., Fond du Lac, Wis.—Coils.
Longdin-Brugger Co., Fond du Lac, Wis.—Bodies.
Pfanstiehl Electrical Laboratory, No. Chicago, Ill.—Ignition specialties.
Chicago Wind Shield Co., Chicago.—Wind shields.
Vivax Storage Battery Co., Chicago.—Batteries.

Coliseum Gallery—Accessories.

Kinsey Mfg. Co., Dayton, O.—Kinwood automobile parts.
Sprague Umbrella Co., Norwalk, O.—Tops and wind shields.
Never-Miss Spark Plug Co., Lansing, Mich.—Spark plugs.
Adam Cook's Sons, New York.—Albany grease.
Indestructible Steel Wheel Co., Chicago.—Steel wheels.
Imperial Brass Mfg. Co., Chicago.—Specialties.
Republic Rubber Co., Youngstown, O.—Tires.
Prest-O-Lite Co., Indianapolis, Ind.—Gas tanks and tire inflators.
Valentine & Co., Chicago.—Varnishes.
Electric Storage Battery Co., Philadelphia, Pa.—Accumulators.
McCord & Co., Chicago.—Lubricators.
Auto Improvement Co., New York.—Self-starters and specialties.
Wray Pump & Register Co., Rochester, N. Y.—Tire pumps and registers.
Aurora Automatic Machinery Co., Aurora, Ill.—Thor motors and components.
Pennsylvania Rubber Co., Jeannette, Pa.—Tires.
Hartford Suspension Co., New York.—Hartford-Truffault shock absorbers.
Wm. Cramp & Sons' Ship & Engine Bldg. Co., Philadelphia, Pa.—Bronze castings and automobile parts.
R. H. Smith Mfg. Co., Springfield, Mass.—Springfield motometers.
Chicago Battery Co., Chicago.—Batteries.
Whitney Mfg. Co., Hartford, Conn.—Whitney chains and keying system.
Motsinger Device Mfg. Co., Pendleton, Ind.—Motsinger automobile sparker.
Wheeler & Schebler, Indianapolis, Ind.—Schebler carburetters.
Morgan & Wright, Detroit, Mich—Morgan & Wright tires.
R. E. Dietz Co., New York.—Lamps.
Dayton Electrical Mfg. Co., Dayton, O.—Igniters and ignition specialties.
Hartford Rubber Works Co., Hartford, Conn.—Hartford tires.
Timken Roller Bearing Axle Co., Canton, O.—Bearings and axles.
Diamond Rubber Co., Akron, O.—Diamond tires.
Brown-Lipe Gear Co., Syracuse, N. Y.—Transmissions, differentials and steering gear.
Spicer Universal Joint Mfg. Co., Plainfield, N. J.—Universal joints.
G & J Tire Co., Indianapolis, Ind.—G & J tires.
Badger Brass Mfg. Co., Kenosha, Wis.—Solar lamps and acetylene generators.
Veeder Mfg. Co., Hartford, Conn.—Odometers and speed indicators.
Gray & Davis, Amesbury, Mass.—Lamps.
A. W. Harris Oil Co., Providence, R. I.—Lubricants.
National Carbon Co., Cleveland, O.—Batteries.
Ross Mfg. Co., Philadelphia, Pa.—Lamps.
B. F. Goodrich Co., Akron, O.—Tires.
C. F. Splitdorf, New York.—Timers, distributors, coils and ignition specialties.
Hyatt Roller Bearing Co., Harrison, N. J.—Roller bearings.
Shelby Steel Tube Co., Pittsburg, Pa.—Tubing.
Long Mfg. Co., Chicago.—Radiators.
Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires.
Diamond Chain & Mfg. Co., Indianapolis, Ind.—Diamond chains.

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Jos W. Jones, New York.—Jones speedometers, annunciators, odometers, speed regulators and specialties.
Warner Gear Co., Muncie, Ind.—Gears and parts.
Ajax-Grieb Rubber Co., New York.—Ajax automobile tires.
Goodyear Tire & Rubber Co., Akron, O.—Goodyear tires.
Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin chains and recoil check.
Pantasote Co., New York.—Top and upholstering material.
Warner Instrument Co., Beloit, Wis.—Warner Auto-meters.
Swinehart Clincher Tire & Rubber Co., Akron, O.—Tires.
N. Y. & N. J. Lubricant Co., New York.—Lubricants.
Remy Electric Co., Anderson, Ind.—Magnetos.
Firestone Tire & Rubber Co., Akron, O.—Firestone tires.
Motor & Accessories Mfrs., Inc.
Cook's Standard Tool Co., Kalamazoo, Mich.—Jacks.
Oliver Mfg. Co., Chicago.—Jacks and accessories.
S. F. Bowser & Co., Inc., Fort Wayne, Ind.—Gasolene and oil storage outfits.
Edmunds & Jones Mfg. Co., Detroit, Mich.—Lamps and specialties.
Byrne, Kingston & Co., Kokomo, Ind.—Kingston Carburetters.
Kokomo Electric Co., Kokomo, Ind.—Ignition specialties.
Weed Chain Tire Grip Co., New York.—Non-skid chains.
Hancock Mfg. Co., Charlotte, Mich.—Oilers, tank gauges and fittings.
Leather Tire Goods Co., Newton Upper Falls, Mass.—Non-skid covers and leather inner tubes.

Coliseum Annex—Second Floor.

Hotchkin Mfg. Co., Chicago.—Anti-jolt device.
Auto Accessories Mfg. Co., Detroit, Mich.—Tops, tire jackets and accessories.
Duff Mfg. Co., Allegheny, Pa.—Barrett jacks.
Western Malleable Steel Co., Detroit, Mich.—Steel castings and forgings.
Midgley Mfg. Co., Columbus, O.—Midgley rims and wheels.
R. E. Hardy Co., New York.—Sta-Rite spark plugs and ignition specialties.
Jos. Dixon Crucible Co., Chicago.—Graphite lubricants.
Stewart & Clark Mfg. Co., Chicago.—Speed indicators.
Atwater-Kent Mfg. Works, Philadelphia, Pa.—Igniters and timers.
Elite Mfg. Co., Ashland, O.—Jacks and pumps.
Empire Auto Tire Co., Trenton, N. J.—Empire tires.
Ross Gear & Tool Co., Lafayette, Ind.—Gears.
J. H. Sager Co., Rochester, N. Y.—Supplementary springs.
Hoffecker Co., Boston, Mass.—Speed indicators.
C. Cowles & Co., New Haven, Conn.—Lamps.
Breeze Carburetter Co.—Breeze carburetters.
Auto Pump Co., Springville, N. Y.—Pumps and specialties.
Gray--Hawley Mfg. Co., Detroit, Mich.—Chime whistles and cutout mufflers.
Lipman Mfg. Co., Beloit, Wis.—Speed indicators, gasolene gauges and odometers.
National Battery Co., Buffalo, N. Y.—Batteries.
Michelin Tire Co., Milltown, N. J.—Michelin tires.
Gemmer Mfg. Co., Detroit, Mich.—Steering gears and parts.
Briscoe Mfg. Co., Detroit, Mich.—Hoods, tanks, radiators, etc.
Heinze Electric Co., Lowell, Mass.—Coils and ignition equipment.
Wm. C. Robinson & Son Co., Baltimore, Md.—Greases and lubricants.
Oliver Instrument Co., Minneapolis, Minn.—Speed indicators.
Whiteley Steel Co., Muncie, Ind.
Atwood Mfg. Co., Amesbury, Mass.—Lamps and generators.
Standard Roller Bearing Co., Philadelphia, Pa.—Bearings.
Motor Car Specialty Co., Philadelphia, Pa.—Speed indicators and specialties.
Conn. Telephone & Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.
Diezmann Shock Absorber Co., Hoboken, N. J.—Shock absorbers.
Avery Portable Lighting Co., Milwaukee, Wis.—Gas tanks.
Precision Appliance Co., Chicago.—Hill precision oilers.
Kilgore Mfg. Co., Old Town, Me.—Pneumatic shock eliminators.
Uncas Specialty Co., Norwich, Conn.—Leavitt timers and distributors and specialties.
Witherbee Igniter Co., New York.—Witherbee storage batteries and Wico spark plugs.
Muncie Auto Parts Co., Muncie, Ind.—Parts.

Coliseum Annex—Second Floor Motorcycles.

Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles.
Harley-Davidson Motor Co., Chicago.—Harley-Davidson motorcycles.
Armac Motor Co., Chicago.—Armac motorcycles.
G. H. Curtiss Mfg. Co., Hammondsport, N. Y.—Curtiss motorcycles.
Fowler-Manson-Sherman Cycle Mfg. Co., Chicago—Manson motorcycles.
Light Mfg. & Foundry Co., Pottstown, Pa.—Light motorcycles.
Excelsior Motor & Mfg. Co., Chicago.—Excelsior and Triumph motorcycles.
Consolidated Mfg. Co., Toledo, O.—Yale-California motorcycles.
Merkel Motor Co., Milwaukee, Wis.—Merkel motorcycles.
Hornecker Motor Mfg. Co., Whiting, Ind.—Torpedo motorcycles.
L. C. Chase & Co., Boston, Mass.—Cover and top materials.
Stackpole Battery Co., St. Mary's, Pa.—Batteries.
American Electrical Novelty & Mfg. Co. New York—Ever Ready batteries, lamps and tire specialties.
Vesta Accumulator Co., Chicago.—Batteries.
Igniter Appliance Co., Cleveland, O.—Ignition specialties.
Rands Mfg. Co., Detroit, Mich.—Tops and accessories.
Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel horns.
C. T. Ham Mfg. Co., Rochester, N. Y.—Lamps.
Pittsfield Spark Coil Co., Dalton, Mass.—Ignition specialties.
National Oil Pump & Tank Co., Dayton, O.—Storage tanks.
Limousine Carriage Mfg. Co., Chicago.—Wind shields.
A. R. Mosler & Co., New York.—Spark plugs.
Sherwin-Williams Co., Cleveland, O.—Paints and varnishes.

First Regiment Armory—Gallery.

Standard Lamp & Mfg. Co., Chicago.
Motor Way, Chicago.
Continental Caoutchouc Co., New York.—Continental tires.
Eugene Arnstein, Chicago.—Accessories.
Motor, New York.
Acetylene Co., New York.—Carbide and lamps.
Thos. Prosser & Son, New York.—Krupp steel.
Ventilated Cushion & Spring Co., Jackson, Mich.—Ventilated cushion system.
Edward Neely & Co., Chicago.—Specialties.
Newmastic Tire Co., New York.—Compound tire filler.
Franco-American Auto & Supply Co., Chicago.—Batteries.
Cycle & Automobile Trade Journal, Philadelphia, Pa.
McCanna Mfg. Co., Chicago.—Supplies.
Standard Varnish Works, Chicago.—Varnish.
Motz Clincher Tire & Rubber Co., Akron, O.—Tires.
Morrison, McIntosh & Co., Grinnell, Ia.—Gloves and gauntlets.
Horseless Age, New York.
Manhattan Screw & Stamping Co, New York.—Lamps, horns and tire carriers.
Motor Age, Chicago.
Excelsior Supply Co., Chicago.—Accessories.
Class Journal Co., New York.
Heitger Carburetter Co., Indianapolis, Ind.—Carburetters.
Healy Leather Tire Co., Chicago.—Tires.
Auto Parts Co., Chicago.
Edmund E. Haus Co., Minneapolis, Minn.
F. A. Brownell Motor Co., Rochester, N. Y.—Motors.
Electrical & Mechanical Development Co., Asbury Park, N. J.
Norris Auto Co., Saginaw, Mich.—Tire protectors.
Central Rubber Co., Chicago.
Robert Bosch, New York, Inc., New York City.—Sims-Bosch magnetos.
Troy Carriage Sun Shade Co., Troy, O.—Tops.

Seventh Regiment Armory. Commercial Vehicles.

H. H. Franklin Mfg. Co., Syracuse, N. Y.
American Motor Truck Co., Lockport, N. Y.
Safir Automobile Co., Zurich, Switzerland.
Buckeye Mfg. Co., Anderson, Ind.
Rapid Motor Vehicle Co., Pontiac, Mich.
White Company, Cleveland, O.
Commercial Motor Truck Co., Plymouth, Ohio.
Sayers & Scovill, Cincinnati, O.
Continental Motor Car Co., Chicago.
Coppock Motor Car Co., Marion, Ind.
General Vehicle Co., New York.
Logan Construction Co., Chillicothe, O.
Reliance Motor Car Co., Detroit, Mich.
Gifford-Pettit Mfg. Co., Chicago.
Alden-Sampson Mfg. Co., Pittsfield, Mass.
Oscar Lear Automobile Co., Springfield, Ohio.
Studebaker Automobile Co., South Bend, Ind.
ope Motor Car Co., Indianapolis, Ind.
Streator Motor Car Co., Streator, Ill.
Pittsburg Motor Vehicle Co., New York.
Mitchell Motor Car Co., Racine Wis.
Couple Gear Freight Wheel Co., Grand Rapids, Mich.
Knox Automobile Co., Springfield, Mass.
Worth Motor Car Mfg. Co., Evansville, Ind.
E. R. Thomas Motor Co., Buffalo, N. Y.
Colt Runabout Co., New York.
Brush Runabout Co., Detroit, Mich.
A. D. Meiselbach Motor Wagon Co., North Milwaukee, Wis.

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CLASSIFICATION OF TOURING CARS

System Developed by British Makers Adopted by Royal Automobile Club—How Classes are Determined.

After a long period of consideration, a committee of the Society of Motor Manufacturers and Traders, of England, has developed a system of classification for touring cars, the result being the establishment of a series of 10 types, each defined by certain standard specifications. The Royal Automobile Club has adopted the system, after its confirmation by the Society, and will use it as a basis of classification for its competitions in future. Furthermore, an effort is being made to have other motoring organizations adopt it for general use.

The factors considered in making up the groups embrace the horsepower rating, according to the R. A. C. formulae; a factor composed of the square of the cylinder bore, multiplied by the number of cylinders; the seating capacity; weight, with passengers, tools and equipment, complete; the distance from the dash to the center of the rear axle; and the windage area of the complete vehicle. Each group or class includes cars falling within certain limiting dimensions in these respects, and such is the method upon which they are drawn, that the design and complete specifications of the car are pretty closely defined in this way. The classifications and limiting dimensions are given in the following table:

Standard.	a Engine Rating $= \frac{D^2N}{2.5}$		b Corresponding to D^2N Dimensions.		Minimum Seating Capacity	Weight, with Passengers, Petrol, Tools and Spares.	d Distance from Dash to Centre of Back Axle.	Wind Resistance Area in sq. ft.	
								e Body:—Product of Mean Back Width × Height from Frame.	f Wings:—Area of Vertical Projection of the two Front Wings.	Sum of Body and Wing.
No.	Over	Up to	Over	Up to		Min. cwt	Min. ft. in.	Min.	Min.	Min.
1	0	6.4	0	16	c 2	13	4 0	9½	3	12½
2	6·4	12.0	16	30	2	17	4 0	9½	3	12½
3	12·0	16.0	30	40	4	21	4 9	13	3	16
4	16·0	20.8	40	52	4	25	5 0	13	4	17
5	20·8	25.6	52	64	4	27½	5 9	14½	4	18½
6	25·6	32.4	64	81	4	30	6 0	14½	4	18½
7	32·4	40.0	81	100	4	32½	6 0	14½	4½	19
8	40·0	46.4	100	116	4	35	6 3	15	4½	19½
9	46·4	52.8	116	132	4	37½	6 6	15	4½	19½
10	52·8	60.0	132	150	4	40	6 6	15	5	20

The methods of obtaining the various factors are further explained by the committee responsible for the system, as follows, the letters referring to columns in the above table:

a. R. A. C. ratings for internal combustion engines. For steam cars, equivalent rating to be settled by the Technical Committee of the R. A. C.

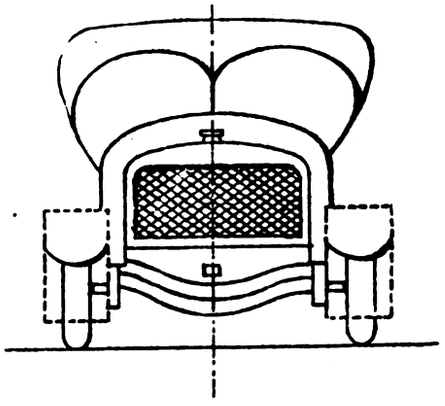
b. The dimensions in this column are those governing the classes at Brooklands.

c. In this case, maximum.

d. Distance from Dash to Back Axle.—In the case of "curved" or "dished" dashboards, the measurement is to be made from the back of the foremost plane portion of such dashboard. Cars which so far depart from the usual design as to render the determination of the dashboard's position difficult, or impossible, shall be deemed to have a dashboard 28 inches forward of the front portion of the driver's seat.

e. In measuring bodies for wind resistance area, the mean width at the widest part—usually the back—is to be taken. The height is to be measured from top of frame to top of body, including any projecting upholstery. If the frame be bent upwards at the rear end, then the height is to be taken from the level of top of frame before such upward bend occurs. The bodies contemplated in Table 4 are open touring bodies only.

f. By the "vertical projection of the two front wings" is to be understood the sum



STANDARD OF WINDAGE MEASUREMENTS

of the two rectangles indicated in dotted lines in the accompanying sketch. All touring cars are to have as much wing area to the rear wheels as to the front wheels.

The need of some such system, in the face of the marked inadequacy of horsepower, weight and price classifications, has long been felt. Moreover the various attempts which have been made at rating by formula, while satisfactory in some degree, have nevertheless, fallen far short of the ideal. For several years foreign competitions have been carried out on a formula basis in one way or another, the most elaborate being the British Tourist Trophy, in which the rules used this year and last, were so exacting as to require the construction of special cars for the event. The same unhappy circumstances, also circumscribed the builders of cars for the three great European events of the year, that is to say, the Kaiser cup race, the Grand Prix, and the Targa Florio.

Whether or not the present system will prove sufficiently inclusive, and at the same time, will display sufficient latitude for furthed improvement of cars, remains to be seen. At all events, the effort is one which is worthy of the serious attention of all motorists, and one the outcome of which will be watched with considerable interest. Moreover, it looks toward a broader standardization of design.

SEES WEALTH IN SPARE WHEELS

America Waiting for Them, Helm Declares —Half a Million Dollars His Estimate of Yearly Profits.

From St. Anne, Illinois, to London, England, is a far cry, but the two localities are to be linked by an automobile accessory enterprise for which the diffident promoters, after a most cautious and conservative estimate, promise an annual net profit of $514,440, and that, too, on a beggarly capitalization of about $420,000. This figurative gold mine, while having its theatre of operation in the United States and looking to American pockets for its dividends, is being withheld from American participation in the opportunities it presents for investment, and under the title of the Spare Motor Wheel of America, Ltd., is being financially launched in Great Britain where an eager public is said to have over-subscribed for the 62,000 of the £1 shares which were offered for subscription out of the total of 85,000 shares.

"To manufacture and sell the Stepney spare motor wheel in U. S. A." is the avowed purpose of the company, and that the field is a well chosen one, with possibilities quite proportionate to the magnitude and traditional greatness of the good old "U. S. A.," is made clear by the prospectus which has been filed with the British registrar of joint stock certificates. With an adeptness for multiplication not unpleasantly reminiscent of the renowned Colonel Sellers, who figured that "in India there are 200,000,000 natives; every native has two eyes; and those 400,000,000 eyes need eye-water," the calculations given in the prospectus show that on January 1, 1908, there will be in use in the United States 280,000 automobiles, each automobile having four wheels, and each wheel liable to tire puncture, thus giving the Stepney device "prospective sales on 1,120,000 wheels."

Apparently no attempt will be made to supply all of the 1,120,000 "prospective" wheels the first year, however, a more modest plan of action seemingly having been decided upon. Through the activity of W. W. G. Helm, described as the "late head of the Helm Manufacturing Co., of Jacksonville, Ill.," and who is to be general manager, the company has acquired "the valuable, comprehensive and fully equipped freehold land and factory, plant, machinery, etc., of the St. Anne Kerosene Motor Company, of St. Anne, Ill.," and it is here that the manufacture of the Stepney spare wheel for the American trade will be begun. Associated with General Manager Helm in the manufacture and sale of the device in America will be Lester E. Broyles, "late president of the Bradley Stilwell Co., of Kansas City, Mo." who will be managing director; Ivor F. Thomas, of St. Anne, Ill.,

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who is slated as resident secretary; and W. H. Titus, of the Clay County State Bank, Excelsior Springs, Mo., who will serve on the "advisory committee in America." Broyles has been engaged for five years at an annual salary of $3,000, supplemented by an arrangement under which he gets 10 per cent. of the net profits of the company for the excess over 50 per cent. On the prospectus estimate of profits this will mean for him at least $30,000 a year, the estimate giving assurance of £102,888 net profit on the £85,000 capitalization. The estimated profits are based on 3,000 wheels a month.

That W. G. G. Helm is the man for his job is indicated by the magnetism of the figures he compiled for the benefit of the British public and which, printed in big, black type in British publications, have served to draw the £ s. d. from the British pocketbooks. Listen to Mr. Helm:

"According to your instructions, I have as thoroughly investigated, as limited time would permit, the automobile situation in America as to the number of cars in use and number manufactured each year; also location of plant, equipment, cost of production, cost of plant and marketing (based on probable demand), and conservative profits based on the following facts, estimates and opinions.

"The facts, figures, and estimates were obtained from those, who are considered the most reliable, experienced, and conservative authorities in their various lines in America. The U. S. Government report is undoubtedly correct, but I regret the statistics are not more up to date.

"Considering there is a continued daily increase of sales of motor cars, and basing my figures on the authorities, I think you may conservatively estimate there are now (Aug. 3) in use in the United States 200,000 machines.

"I do not think there is any doubt but the estimate of 80,000 for 1907 will be reached, showing a gain of 33⅓ per cent. over 1906. The statistics show that since 1906 the United States lead in the number manufactured.

Estimated Profits.

3,000 wheels per month, at $25 each		$75,000.00
Material and productive labor	$559.32	
Non-productive labor.	84.12	
Sales department	97.84	
$741.31, divide by 200, equals	3.71	
Cost of 3,000 wheels, at $3.71	$11,130.00	
Commission, 20 per cent.—$5.00, or 3,000 wheels	15,000.00	
		26,130.00
Monthly profits		$48,870.00
Yearly profits on same basis...		$586,400.00
Less royalty of $2 per wheel...		72,000.00
Annual net profits		$514,440.00 or £102,888

"These figures are based on a production of 40 per cent. reserve stock.

"After considering the above information, and the fact that it was obtained from recognized automobile authorities and other reliable courses, I can conservatively estimate that you should sell 36,000 wheels the first year (and should not be surprised if your sales run 60,000 wheels per annum), my estimate being based on 12½ per cent. of the probable 280,000 cars in use on January 1st, 1908, or, carried still further, you have prospective sales on 1,120,000 wheels, with puncture liabilities. Your succeeding years should show a large increase in sales, as I am thoroughly convinced the wheel has such unusual merits that each one in use will prove an advertisement."

The Stepney spare wheel has for its chief feature a demountable rim carrying an inflated tire, the spare rim and tire carried on the car being readily substituted on the wheel when the tire on the latter is punctured. It is at present enjoying a great popularity in England, being fitted to both taxi-cabs and private machines, and the shares in the British company have yielded 20 per cent. in dividends for nine months business and stand at a 50 per cent. premium. Having thus in a measure conquered England, the conquest of America is the next step, the new company being formed with this purpose. Beyond paying a royalty of $2 per wheel to the parent company, the American company will be entirely independent, and its plan of marketing the wheels is designed to take advantage of that peculiar open-handedness and disregard of price with which the American automobile public is popularly credited. This is brought out in the fact that while the wheels sell for about $14 in England the price in the United States is to be $25, which on a manufacturing cost of $3.71 is rather "rubbing it in," particularly in view of the fact that only those Americans with foresight enough to cable to London for shares will have a chance to participate in the sale to the 1,120,000 "prospectives."

Color Schemes for Trucks.

The business or commercial automobile, speaking upon the basis of a broad application, has received kinder treatment at the hands of the painters than the pleasure vehicles, and for this reason: Owners of commercial automobiles have dictated less in regard to the employment of colors than have the owners of pleasure vehicles, and, as a result, the painters have used color designs suited, in most cases, precisely to the form, size and business requirements of the vehicles. To recite, even in a general way the colors chosen and made use of in the painting of the business automobile would transcend the limits of this paper. We need only to say, remarks the Carriage Monthly, that the range and variety of colors is infinite, and clearly comprehend, within the law of strict harmony, all the known pigments from white to black. At the present time, the business automobile, quite to the same extent as the business wagon, is more or less at the mercy of the Napoleon of colors and the pictorial artists. And to the fancies of these clever craftsmen few can take exception, since the business wagon and the business automobile are in part given over to advertising purposes.

In all the leading American cities one may see daring feats in the treatment of colors executed upon horseless trucks, drays, vans, and commercial wagons generally, and, save an occasional exception, the effects are admirable. Naturally overdisplayed the effects pass uncriticized, being accepted as exaggerations of the advertiser, rather than color misconceptions of the painter. And, indeed, this assumption is more often than not the true one.

The day is not far distant, if, in fact, it has ever been foretold, when other than nominal modifications in the present color treatment of business auto-surfaces may be expected. The business automobile painter has asserted his ability as a colorist, pictorial artist and finisher.

Brilliant reds, greens, both light and deep, blues of pale and deep shade, and yellows running through many intermediate tones, together with warm, soft browns, and grays, with cheer and rest to them, are the colors that promise to win continued favor with owners and users of this class of vehicles.

Combinations of Tuscan and Indian red and any of the yellow pigments, barring the extremely pale tones, furnish rich, pleasing effects. Deep and medium shades of red judiciausly located in combination with the deep, brilliant greens, display effective results. Blues, to be used without offense in combination with other colors, must be handled with caution. Not a few of the soft, neutral browns—those, for example. made chiefly from the siennas—may be placed very effectively in combination with blues. Wine colors and the neutral grays combine nicely together. The ornamental effects applied to these colors, and combinations of colors, and to an infinite variety of others which might be mentioned, not infrequently serve, as they should, to soften down and mellow what might otherwise prove out in the field of service harsh and, possibly, inconsistent effects.

Keeping Dust from the Motor.

Where tightly closing bonnets are employed, it appears a needless refinement to provide a housing for the working parts of the motor, such as the valve gear and magneto. But when it is considered that the chief source of dust and dirt is the suction through the radiation, which becomes the more violent and effective in its scouring action on bright metal parts, the more perfect the enclosure of the hood is made. Not until the cooling air is made to pass through a closed duct, completely isolated from all working parts, will it be really expedient to expose working surfaces to the interior of the motor enclosure.

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NEW THINGS AT THE LONDON SHOW

They Were Seen Mostly in Detail Features —Some Noteworthy Departures— American Cars that were Staged.

New things at the London show at Olympia, which closed its two weeks' run last Saturday night, were by no means absent, and though no revolutionary complete car designs were disclosed, yet novelty and departure from old practice in detail features were to be found on every hand.

The show was the sixth so-called international motor car exhibition given by the Society of Motor Manufacturers and Traders, and it basked in the sunlight of royal patronage, the flattering presence of H. R. H. the Duke of Connaught gracing the opening ceremonies on Monday, November 11. The body of the immense building was reserved for the car exhibits, while tires and accessories were staged in the galleries. In addition to the cars in the building, there were flocks of demonstration cars outside at the Hammersmith entrance, many of the exhibitors thus showing models outside that space limitations prevented their putting on display in the building.

No uniformity of decoration governed the exhibits and individual fancy was given full play, yet the general effect was not bad. Elaborate arches ornamented with electric lights were the most usual form. Photographers were forbidden to use their cameras after 11 o'clock in the morning, with the result that on account of morning fog and dullness they were seriously hampered in their work. The closing hour in the evening was also advanced to 9 o'clock instead of 10, which was the subject of complaint.

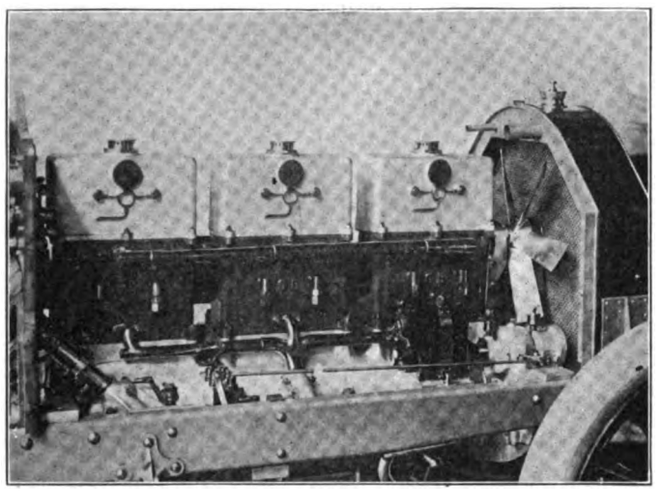
Four American cars, the White, the Cadillac, the Ford and the Buick, were shown, but British makers, of course predominated, with the French, German, Italian and Belgian products next in order; one car from Spain also was in evidence. The total of exhibitors is given as 312, of whom 140 were pleasure car exhibitors, who exhibited some 600 cars.

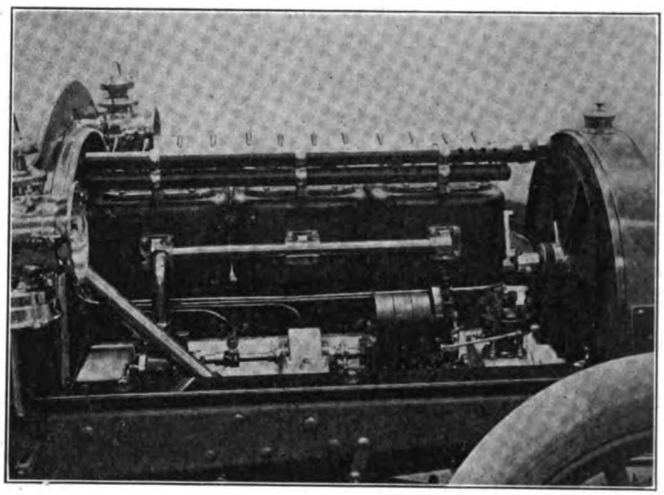
In design tendencies perhaps the most marked features were the majority use of the three-quarter elliptic springs for the rear suspension, and the use of pressed steel frames narrowed in front, to give wider swing to the steering wheels, and raised at the back. Three-quarter platform spring suspension in the rear was also prominent. Ball bearings for crankshafts were shown in a great variety of forms, some in combination with plain bearings, and others employing multiple ball bearings at points where long plain bearings were formerly used, although a few makers this year returned to plain crankshaft bearings. Thermo-syphon cooling was given a large representation and there were numerous examples of the use of one distributor for both the magneto and the accumulator high tension ignition where duplicate systems were employed. Low tension magnetos were comparatively few. A very general effort to have the valve mechanism as clear and accessible as possible was observable, the inlet and exhaust manifolds and piping being so disposed as to give plenty of space around the push rods, springs and caps. In some cases the inlet and exhaust ducts were in the cylinder casting itself, thus minimizing the outside piping. The placing of all valves on one side seemed to be on the increase.

The system of casting all four cylinders en bloc had concrete form in about a half dozen exhibits, while several makers showed six cylinder cars with the cylinders cast in sets of three. The great number of six cylinder cars bore testimony to the popularity which this form of motor now enjoys, and the use of six cylinders in the lower ratings, down to 15 horsepower, indicated to what extent the movement has taken hold.

Direct drive on both third and fourth speed was much in evidence, though direct on third with a geared-up fourth was perhaps the more popular form. A few worm drive cars appeared. Selective transmission was general, the selective mechanism in nearly all cases being enclosed in a box of its own to protect it from mud and dirt. Half-compression cams to make easy the starting were fitted to a large number of cars, while the representation of self-starters, though small, was significant. Clutch brakes to still the gears in the transmission case for gear changing were shown in variety, and in at least one case an additional clutch, back of the gear box, was introduced, so that with the car running the gears all may be brought to a stop.

Hopeful evidences that makers are beginning to realize that set and uniform distances and movements for clutch pedals and operating mechanism will not suit or accommodate all drivers, owing to diversity in leg length or other physical dimensions, came to light in the fact that some of the cars had special provision for adjusting these lengths and distances to please the operator. The leather faced cone clutch held its own against the invasion of the multiple disc, while the floating ring clutch showed new converts. Shaft drive on high powered cars, with propeller shaft enclosed by a casing or sleeve to take the torque, was more general than heretofore, as was the use of chain cases for cars with side chains. In many instances these cases took on the added function of serving as radius rods, a few also carrying the braking strains. In the chain driven cars there was a general tendency to place the differential gear box and countershaft well back, to shorten the chain length from the driving sprockets to the rear wheels. Mechanical lubrication was to be found on the majority of cars. In carburetters there was little novelty, although multiple jets appeared on quite a few of the cars. Wire wheels figured on some of the most prominent exhibits, but gave little sign of any general adoption.





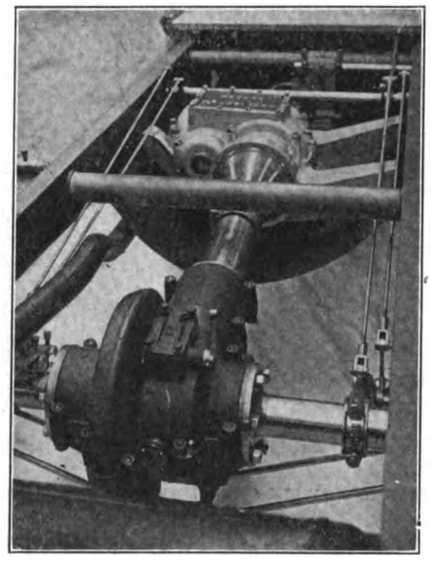
TWO OLYMPIA EXAMPLES OF SIX CYLINDER MOTOR EXTERNAL SIMPLICITY

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An enumeration of some of the more conspicuous departures from general practice shows that designers and builders have not as yet settled down to any dull ruts so far as detail arrangement is concerned. Thus on the Armstrong-Whitworth car the braking application on the rear wheels is balanced by small differential gears, instead of by pulley block or balance beam. The Bentall car mounts a transmission gear box that is hinged to the frame, so that it accommodates itself to the radial action of the propeller shaft and gives a straight line drive from gear box to rear axle bevel. Clutch position adjustment is provided on the Benz cars. The bonnet on the Alldays car is made in removable halves, dispensing with the usual hinges which are subject to strain and injury. The Brittania has a clutch brake which is composed of an extension of the clutch spring in sleeve form, shaped conically at the end and fitting into a conical boss on the end of the clutch center, thus braking the movement of the clutch when it is withdrawn. The same car has a back axle that permits of ready changes of eight different gear ratios at the bevels, so that the most suitable gear ratio may be fitted. Variable lift to the inlet valve is a feature of the Brown. On the B. S. A. the gas is admitted to the engine cylinders without passing through any pipes from the carburetter, the latter being placed in a recess between the two sets of cylinders and the throttle set up close to the castings. Rubber blocks in the coupling between the clutch shaft and the gear box of the C. G. V. provide a spring drive effect that last year was obtained by the use of spiral springs.

Several unique features distinguish the Chenard-Walcker models that were shown. By adding to the number of layshafts in the gear box the main gear shaft is balanced of strain, and ease of gear changing and freedom of distortion friction are claimed. The fan behind the radiator is backed by a plate which keeps the dust from being thrown on the engine and the high tension magneto current is conveyed to the spark plugs by bare wires instead of heavily insulated leads, the ordinary air being relied upon for insulation. The joints between the cardan shafts and the drive pinion are fitted with radial rollers in corresponding slots, to combine both universal and longitudinal functions. One of the Clyde models displayed a three cylinder engine set transversely across the frame and driving to the rear axle change box by a single chain. In the transmission the gears are always in mesh, changes being effected by dog clutches. A mercury dashpot on the air inlet of the carburetter is a feature of the Wasp. By oxy-acetylene welding the two halves of the back axle casing and differential housing of the Daimler are made practically one piece, covers being provided for removing the differential. The rear springs act also as radius and torsion rods, and ignition, throttle and extra air are controlled by a single lever on the steering wheel. In the chain driven model the chain cases, in addition to acting as radius rods, carry the rear brake spindles. With the bevel drive, differential and change speed all in one case mounted on the rear axle, the Darracq construction presents considerable unsprung dead weight over usual practice, but a saving is claimed in the total weight. The layshaft of the transmission lies transversely across the car, parallel with the rear axle. On the front of the radiator are two knobs for manipulation in starting. One retards the high tension magneto, and the other "tickles" the carburetter. After the car is started the driver is given no further control over the ignition timing.

Canting the rear wheels is made possible on the De Dietrich by introducing universal joints between the ends of the differential



REAR AXLE AND TORSION GROUP OF M. M. C.

shafts and the live axle shafts rotating the rear wheels, so that the latter may be cambered or dished as are the front wheels. The Delaunay-Belleville 15 horsepower six cylinder car has the cylinders cast en bloc in sets of three. On the Dennis car the cylinders, though cast separately, are connected at their adjacent points in such a way as to throw all the water spaces of the jacketing into one. Low tension magnetic plugs appear in the Du Cros Mercedes ignition. A new steam car, the E. J. Y. R., which starts on gasolene and switches to kerosene, has a flash generator and a three cylinder single acting engine, with tappet valves, and has a disconnecting clutch. In the new Fiat the engine is governed by the pump of the oiling system.

The Gobron-Brillie, which has two pistons in each cylinder, one going up and the other down when the charge is expanded between them, was shown in both fours and sixes. The six cylinder model, having twelve pistons, is externally very smooth and clear in appearance around the engine. It is equipped with a compressed air starting system, the pressure from which also may be utilized for inflating tires. Two water circulation pumps are fitted to the Hillman-Coatalen six cylinder, one to each set of three. The Hotchkiss light car of four cylinders has the latter cast en bloc, and the secondary ignition leads to the various cylinders are in different colors, so that wiring mistakes are easily avoided. The Iden and the Pullman are front wheel drive affairs, acting as fore-cars or tractors. Air cooling and belt drive by means of two belts to the rear wheels distinguish the O. T. A. V. cars that were exhibited. The air is forced through a cooling jacket around the cylinders, after the manner of the Frayer-Miller. An unusually strong gear box is mounted on the M. M. C. six cylinder and the propeller shaft is enclosed in a generous casing which comes up to the back of gear box, terminating in a ball and socket and acting as a torsion rod. Coil clutches were shown on a few cars, the Mors having this type, in which a steel band coils around the periphery of a ring forming part of the fly wheel. The Motobloc four cylinder engine, with the flywheel between the second and third cylinders, although not new, attracted attention.

Panhards were shown in their latest forms. While the three cylinder 8-11 horsepower remains about the same, the 15-20 has a clutch removed from the flywheel and back in the gear box with the transmission. Engine braking is permitted by a foot pedal which closes the exhaust valves and makes the motor work against compression. A compressed air self-starter is mounted on the 18-24 Panhard chassis. The Renault also mounts a self-starter. Porthos cars offer various combinations of pedal action to suit the customer. On the Straker-Squire the frame is flanged in the forward portion to form the engine bed. Roller guides on the Sunbeam, to prevent side sway with heavy limousine bodies, show an eye to modern conditions. The Valveless, having two cylinders communicating with one combustion chamber and twin geared crankshafts was the only car of its kind. A special pedal for braking the clutch shaft in gear changing marked the Weigel control and the Withers dash mounted a ratchet starting device, operated by repeated back and forward movements of a short lever.

San Francisco Show is Abandoned.

San Francisco will not have a show this season, the dealers having voted against holding a show, at their meeting last week. It was found that new models could not be secured by the second week in December, the date proposed. As the next available date was in February, the time of the last show, the dealers considered this too late and decided by a vote of 13 to 7 to not hold a show at all.

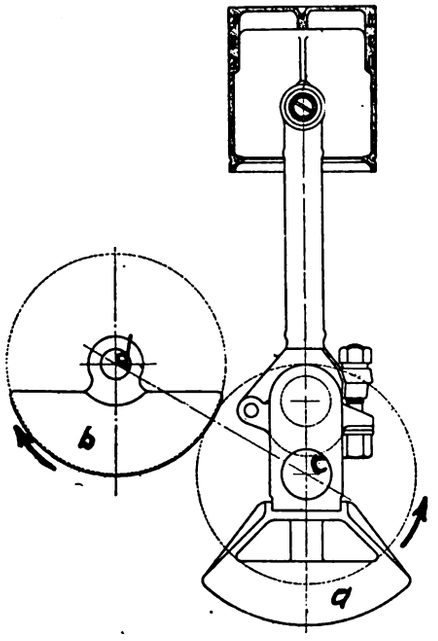
"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

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COUNTERBALANCING THE MOTOR

How It Overcomes Vibration, as Shown in the Brush Runabout—Application of New and Revolutionary Ideas.

Because of the thoroughly original nature of their design, no little interest centers about the construction of the two types of car produced by the Brush Runabout Co., Detroit, Mich. With the advent of the light runabout nearly a year ago, considerable attention was attracted to its general economy of construction and the ingenious manner in which it was displayed. With the appearance of the new twin-cylinder car of somewhat larger dimensions at the recent New York show, however, it was made plain that in addition to a departure from



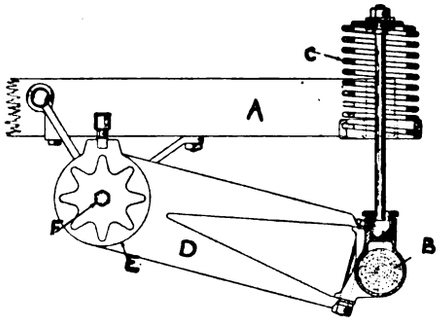
BRUSH BALANCE WEIGHT

many of the traditions of other automobile builders, the designer had developed one or two points which were worthy of study in themselves because of the radical and fearless way in which certain inherent difficulties of the average machine had been attacked.

No qualification of this statement is required when attention is called to the fact that the new motor is balanced in part by means of a revolving weight hung on a little shaft placed at one side of the motor, and entirely independent of any other mechanism, its sole purpose being that of establishing a beat of the proper time and strength to counteract the natural vibration of the motor. When the manner in which this contrivance has been worked out is further considered, it appears that in place of being merely a random effort, it is founded on a very rational idea.

The two connecting rods being coupled to a single crank pin, the pistons move in unison, an impulse thus being secured at every revolution of the shaft. At the same time, the amount of vibration developed in the essential organs of the motor, becomes practically double what it would be with the single cylinder motor of the same size and design.

Considering the pressures underlying this vibration, it may be said that there are three of sufficient importance to be treated independently. That is to say, one caused by the piston and upper ends of the connecting rods; one caused by the centrifugal force of the crank, crank pin, and the lower ends of the connecting rods; and one produced by the reaction of the entire motor, due to the turning effort of the shaft, which is, in effect, the tendency of the whole motor to revolve about the shaft, instead of remaining stationary while the shaft turns within it. The first of these forces tends to make the motor dance up and down in the frame; the second if unbalanced, would produce a constant rotary effect, since the weight of the crank group is constantly pulling away from the shaft,

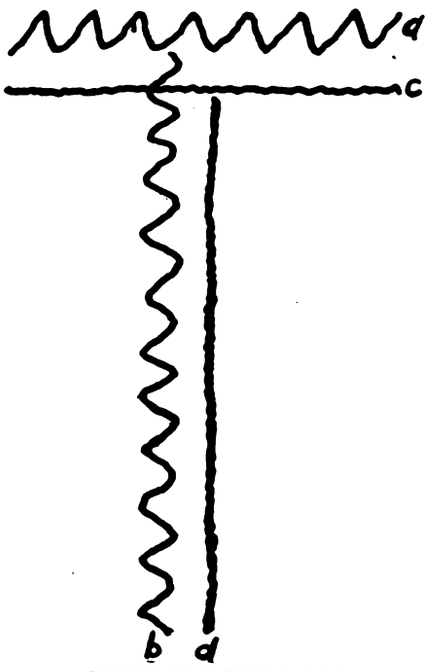


BRUSH SPRING SUSPENSION

while traveling around it; while the third would tend to rock the motor violently in the frame, even upsetting it, if not counteracted in some way.

The method in which these three sorts of vibration cause are overcome is this: A weight, a, is attached to the crank shaft, c, opposite the crank throws, its combined mass being sufficient to counteract the pull of the crank group entirely, and to counteract one-half of the vertical force developed by the moving piston group. The addition of this weight, however, while removing a portion of the vertical force, also adds a new force pulling alternately right and left in a horizontal line and also, to a certain extent, in all other directions except the vertical. By using another set of weights of exactly the same size, set an equal distance from the axis of rotation, but compelled to turn opposite to this, it is evident that the remainder of the vertical force would be counteracted, and all other unnecessary forces as well. This, however, is impracticable in this connection, and although a second equal weight is used, it is placed on a countershaft, set at one side of the crank shaft and a little above the level of the main shaft.

As shown in the diagram, the secondary weight, b, concentrated in a single mass of metal, is mounted in an independent case at one side of the crank case, its shaft, c, being driven directly from the crank shaft by spiral gears. It will be observed that the elevation of the second shaft above the crank shaft, instead of resulting in an absolute counter-balance of all the forces under discussion, must result in setting up still another set of forces tending to yank or pull the motor around its shaft. Instead of being haphazard and unintentional, as might appear, however, the result is a deliberate effort to counteract the tendency of the entire motor to rock in the frame of the car. This it does completely, or nearly so, under conditions of average load and speed —these being the only conditions under which it is possible to compensate with an invariable device.



BRUSH VIBRATION CARDS

How successful is the result of this simple system, with its rather complex theoretical foundation, is apparent from the accompanying graphic records of the vibration actually produced in the car with and without the balance shaft. The records were produced by affixing a pencil to some point on the frame, corresponding to the center of the radiator front, in a general way, and causing a card to travel before it, first horizontally and then vertically. Evidentally any deviation from a straight line produced when the card is moved horizontally, must reveal in a general way the amplitude of the vertical vibrations, while similarly, the vertical graph, shows horizontal vibrations. In the accompanying figure, the lines a and b were produced by the machine with the motor running without the auxiliary weight, while the lines, c and d were drawn after the secondary shaft had been put in place. and with the motor running under exactly

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the same conditions. The graphs, here shown are reproduced from actual cards, secured in this way.

While, as already indicated, every portion of the Brush cars is more or less revolutionary, perhaps, none is more strikingly so, according to the understanding of the average motorist, than the construction of the chassis proper, which is mainly of wood, stayed and reinforced with maleable iron castings. This construction is extended even to the axles, which, though reinforced by iron truss rods, are of selected wood, oil treated.

The spring suspension also is of particular interest, in that helical springs are employed in compression in conjunction with automatic shock absorbing radius rods. As indicated in the illustration, the frame, A, is supported by the spring, C, which rests in a socket bolted directly to the sill and is attached to the axle, B, by a rod in compression resting in a spherical joint. The casting which supports the spring link, also carries the axle end of the combined radius rod and spring brake or shock absorber D, which is bracketed to the frame, by means of the friction joint, E, adjustable by means of the nut, F. Four of these radius rods, combined to preserve the location of the frame over the axles, leaving to the springs no function except that of supporting the superimposed weight of the chassis.

The general specifications of the two-cylinder car include the cylinder dimensions, which are 4 by 4 inches; the rating, which is 12 horsepower; the speed range, which is 600 to 2,500 revolutions per minute; and the general construction of the motor, which embraces screwed-in cylinder heads, mechanically operated valves placed on the left side, tubular-connecting rods, and continuous feed floatless carburetter, which is supplied with fuel by a diaphragh pump actuated by the variations of pressure in the cylinder. The transmission is by modified planetary change gear, having but a single set of pinions, counterbalanced to avoid vibration, and double chain drive. The wheels are 30 inches in diameter, shod with 3½-inch tires, solid tires being optional with the purchaser; the wheel base is 88 inches, the weight 1,200 pounds, and the standard equipment, a runabout body, with rumble box seat or rear surrey seat, as an extra.

Another Compressed Air Automobile.

Another compressed air automobile has been developed—this time in Maine. The leading feature of its construction, aside from the fact that the air-compressor is driven by a gasolene motor, while the driving motor is actuated by compressed air, is the fact that the compressor is developed upon an alleged new plan of construction, the mechanism being mounted within the tank which it supplies. The heat generated by compression thus has a regenerative influence on the air on storage. A 50 per cent. increase in power is claimed to result from that arrangement.

CONTINUOUS LUBRICATING SYSTEMS

Their Advantages and Disadvantages in Comparison—Cost of Installation the Most Serious Objection.

Because they are no longer a novelty, force fed, continuous lubricating systems, as applied to motors, are no longer heard of to the extent which prevailed a year or two ago. Nevertheless, it is to be remarked that where such systems have been applied they have not been given over, but are retained as valued, if somewhat expensive features of the cars to which they belong. The principle is a good one, and as used in larger power plants, is reckoned as one of the most valuable aids to continuous and reliable operation.

The requirements of a running journal in the matter of lubrication, may be laid down in terms of so many drops per minute at certain rates of speed. The rate of feed as measured on this basis may be altered to suit any reasonable speed variation. But it serves satisfactorily only when certain conditions of alignment, bearing load, and quality of lubricant are fulfilled.

Regarding the flushing system of lubrication, it is an old rule requiring no demonstration, that a bearing never can have too much oil. The cooling function of the oil is better carried out when the supply is in eccess of the actual demand, the certainty of having enough for all actual requirements is assured, and the need of regulating the circulating medium with religious exactitude is eliminated. More than that, the factor of reliability is considerably increased, with an increase in the quantity of flow.

Among the possible objections to the principle, may be mentioned the increased cost of forming ducts in the crank and connecting rod members; the cost of the single continuous flow pump and the sump or oil reservoir in the crank case, as contrasted with the cost of the independent mechanical oiler which they generally supplant; the power absorbed in driving the pump, as contrasted with the power absorbed in driving the mechanical oiler; and lastly, the drawback arising from using the oil over and over instead of feeding perfectly fresh lubricant to each part. Of these, only the latter may be considered as of material import in cars of the better class.

Where a considerable volume of the lubricant is contained in the system at any one time, however, or where frequent renewal is insisted upon, no harm can result from the gradual deterioration in lubricating value of the oil as it passes through its circuit and is returned to the sump. The opportunity given it to settle there, as well as the purifying action of the strainers which always are provided, not to mention the continuous dilution of the oil by the addition of a fresh amount from time to time in order to keep the quantity constant, would seem to be sufficient to keep the value sufficiently constant for all practical purposes. Certainly in practice, no difficulty has been experienced, so far as is known, from this cause.

Generally speaking, then, the advantages of the system are greatly in excess of the disadvantages, except in the matter of first cost. This, of course, is not to be considered in large machines where certainty of performance is a primary consideration. That being the case, it is somewhat to be wondered at that the system is not more widely extended in use among the makers, and further, that it is not broadened sufficiently to make it include the gear case as well as the motor, since such an extension, while adding to the load upon the system, also would increase the amount of oil in service, thus reducing the frequency with which renewals would be required. Where annular bearings are employed, this would be superfluous, to be sure, but on the other hand, were ample lubrication always an assured fact, the use of these expensive mountings might well be foregone, except in cases where extreme durability and low bearing resistance was required, regardless of cost.

How to Increase Battery Output.

A very simple and effective method of increasing the output of ordinary dry battery cells is recommended by a motorist who is identified with the telephone business, and who claims to have adopted the same scheme in that line. It is merely to remove the usual binding post from the carbon terminal, break off the pole flush with the packing on top of the shell, and drill it out carefully to a depth of about an inch and a half. Afterward, a brass screw of about the same length may be inserted, or a specially made binding screw, equally long. In cases where this treatment has been applied, both to old and new cells, the amperage has been found to have increased to a surprising extent. In one instance, he claims that the original reading of 18 amperes per cell, was raised to no less than 28 by this means, while, as showing an opposite extreme, an old and run out cell which had given a 3 ampere reading, after treatment, gave exactly 7 amperes. As showing further, that the life of the cell is not necessarily reduced by this means, in one case a former vehicle mileage of 500 is said to have been increased to 1,500, with no other possible means of accounting for the alteration in performance. The theory is that the longer screw giving better contact, as it does, reduces the internal resistance of the cell, and so increases its efficiency.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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GETTING ON TO THE NEW STYLES

Some Methods Explained in a Show Visitor's "Confession"—Stealing Measurements and Sampling Materials.

"I saw an article in the Motor World the other day about how all the makers of attachments take show time to measure up the different cars so as to be sure of having their stuff fit right when they send it out, and that's right, too. But there's a good lot of measuring of another kind, that you don't see done, and that nobody knows about except the men that do it and their bosses. Only you see the result, and wonder how it is that styles catch on so quick with a whole lot of makers scattered pretty much all over the country." The speaker gazed out of the car window for a moment, and then turned quizically to his seat mate. "Did it ever occur to you that about the only exclusive points on the average automobile body, are those you'd get rid of if you were having a new one made?" he said.

"You see," he continued after a pause, "it all goes back to the days when everybody had a horse and at least two wagons, and when the carriage builders had to scratch pretty hard to keep up with the parade. Now I come from Buggytown, Mass., and all the old line firms down there are turning gray worrying their heads about the automobile body game. And it's just the same way it used to be in the old carriage days. Let one man bring out something new, and all the rest would have it copied about as soon as it came out of the paint shop, or certainly before the end of the first show at which it was exhibited.

"How was it done? Well, that was something a good many builders wanted to know. You might say it was done whatever way came handiest.

"Why, in the old carriage days it was no uncommon thing to send a blacksmith to look over a job somewhere and expect him to come back to the shop and build a pretty good imitation of it on the strength of what he could remember from one good look and a few stolen measurements. The stealing was done in pretty cute ways sometimes, too, for it did not do to be caught with the goods. So when a man wanted to get the height of a wheel, say, he would go stand along side it and make a chalk mark on his coat, perhaps, and then go out and measure himself somewhere against a wall. Or maybe he would carry a bit of string with knots in it, and use it when no one was looking.

"Now those same tactics come into play with automobile bodies. Every show gets a lot of carriage men from all over the country, and Buggytown sends its share of them, too. Some are trimmers, some are blacksmiths, and some are painters, and they are all there for study.

"Why, last year, I had a friend along with me, and we measured the width of the seats of every job in the show, just sitting in them and passing a tape line across back of us. And we did a lot more measuring the people there didn't know anything about, too. My firm sent up a draughtsman who walked over the show with a cane, and I guess some of them thought he wanted to buy the cars, the way he looked 'em over, but if they only knew it, that cane was laid off with inch marks the full length, in little fine scratches. When he got home, he could draw plans for most anything he had seen, and draw them to work from at that. My way is to carry a program rolled up in my hand. Of course it isn't as good as a ruler would be, but when you know how long it is and have a pencil mark or two where the inches come, you can guess pretty close to what you want to know.

"But those little ways don't show a candle to what has to be done when you're really up against it. Now last year, there was one western firm had a certain kind of a button on all its jobs, and we couldn't find out where it came from or how it was made. It was new—that was all—and we set an awful store by new things, even down in Buggytown. Well, sir! The only thing to be done was to steal one, and I want home with one of those buttons in my pocket, just as sure as I'm sitting here, and no one saw me cut it out of a cushion, either. Many's the time I've slit open a little bit of trimming just to see how it was laid up underneath, and you can be sure it takes nice work to do it without getting nabbed at it, because if they catch you, you're liable to be shut up on most any kind of a charge. But they never got any of our boys yet.

"Yes, t'was a good show, all right," as the train pulled into South Station, "but I'll bet you most anything I got more out of it than you did, and if you was to give me a spark plug and a wrench I would no more know what to do with them than you would likely, if you should be told to spread your wings and fly.

" * * * All right, I will. And the next time you're down our way just drop in and see some of our 'New York' bodies. You'll be surprised to see how natural they look."

Tempering the Electric Light Bulbs.

Although the complaint is frequently heard that electric light bulbs are short lived, as a rule when used in automobile lamps, there is no need for this to be the case, provided only, that the proper precautions are taken when the bulb is first put into service. A foreign authority, who is responsible for this statement, also gives the precaution, which is merely to light the lamp and keep it burning for at least a half hour before the machine takes to the road. The effect of this is to harden the filament. If the hardening takes place while the lamp is free from vibration, there is little likelihood of failure.

DUTIES OF THE "TIRE ADJUSTER"

His Profession a New One Requiring Expert Knowledge and Business Ability —Diplomacy Also a Qualification.

Among the most modest and shrinking of all the many "experts" that the automobile industry has developed is the "tire adjuster," who is not, as one might suppose from the name, a person who can put on or remove a tire with superior skill, but one who adjusts the claims made by tire customers as to defects or poor service. He is a very new product and not all tire companies possess him as yet, but the larger ones have found him worth the big salary that he commands for his skill and experience.

With every tire concern, no matter how good its product, there are bound to be cases of dissatisfied customers who have either been unfortunate in getting defective tires or are unreasonable in wanting replacements for tires that have given their full expectancy of service for the condition under which they have been used. To sift the one class from the other and to make adjustments that will at once cost the company as little as possible and still keep the complaining ones friendly is the task of the "adjuster," a duty which requires for its successful performance a combination of tire knowledge and rare tact which is seldom met with in one man.

To make all adjustments as fair as possible and to give them some relation to a fixed standard, the professional adjuster in his judgments keeps two vital considerations in mind. Of these the first is the expected or normal mileage of the tires his company puts out, and the second is their gross cost at the point where they go to the trade or the retail customer. The mileage standard is an arbitrary one and may be three, four or even five thousand miles. It then remains for the adjuster to be able to tell by examination of a returned tire just what proportion of this mileage it has had and to deduct that proportion from any allowance that may be made. Thus if a tire on which the expected life is 4,000 miles shows by its appearance to the experienced eye of the adjuster that it has been run 2,000 miles before giving out from some defect in manufacture or material, the complainant is offered a new tire at half price, the latter being charged for the service that he has had from the old tire.

It is in correctly judging the mileage that the peculiar skill of the adjuster is given its greatest demonstration. While getting from the user as complete a statement as possible as to the time and mileage that a returned tire has been in service, and by means of its serial number checking up the record as to when and where the tire was sold, the adjuster is nevertheless ultimately dependent upon his own ability to tell its

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mileage closely by examination. That the adjuster can really do this with astonishing exactitude suggests the training and experience which are necessary to hold the job. Every available avenue of information is used to assist him in his work, but back of it all there must be the actual personal experience with tires in road work and also the factory knowledge as to their manufacture.

Previous to being made the adjuster for one of the biggest companies doing business in the United States, the present incumbent was first a road driver using its tires, later a repairman engaged principally on the same make of tire, after that a retail salesman for the company, subsequently a wholesale salesman, then a branch manager for several years, and last of all, a factory man. During this period of years his experience with the one make of tire was enormous, and it all contributed to his present efficiency. In the majority of cases he is able to tell by the mere appearance of a tire just what amount of service it has had, and in cases of doubt, he can, by consulting the serial number and thus learning the factory lot and time of manufacture, make his calculations accordingly. Many angry customers, who have given mental estimates as to mileage far below the figures that the adjuster thought probable, have been brought around to agreement with the correction by a judicious use of pencil and paper, figuring their daily mileage and the time the tires were in use.

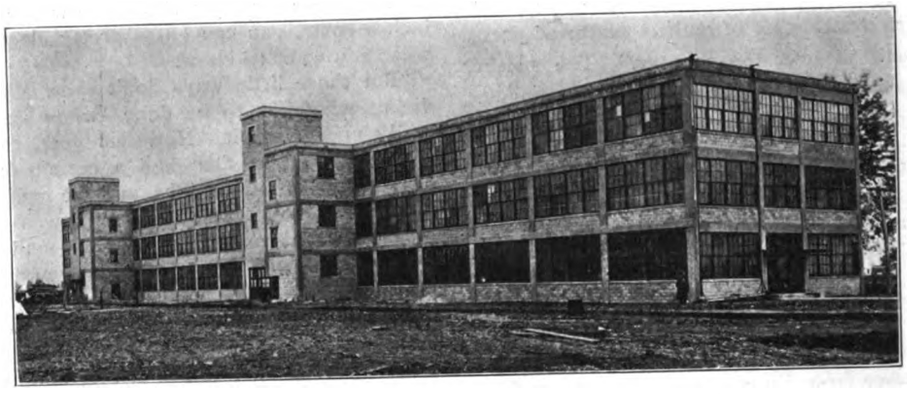
Not all tire claims are adjusted first hand by the adjuster, a good many cases being decided by branch managers on the spot, but all of these decisions ultimately pass under the adjuster's review. If the branch manager has made too liberal an allowance he is charged with the difference under the cost price of the tires, but on the other hand if he has saved the company money and has at the same time satisfied his customer, he is credited with the saving. In some cases, where the facts are perfectly clear to the adjuster, it is wise for business reasons to make replacement concessions that on the facts alone are unwarranted. The complainant may have a car which has been run hundreds of miles by his chauffeur without his knowledge, and to attempt to prove that such is the case might take more time and trouble than could be paid for by a slight saving in the adjustment. Similarly, tangles sometimes occur with big buyers in the trade, where in particular instances it is the part of policy to yield a little more than the facts justify. Such concessions, however, opening as they do some very dangerous possibilities and precedents, are only to be made in exceptional cases, and it is here that the trade knowledge and wisdom of the adjuster is called into play.

Quiet and unobtrusive as is his work, the adjuster nevertheless represents one of the most important and responsible branches of the tire business in its relations with the public and the trade.

THOMAS DETROIT NOW "AT HOME"

New Factory in the Michigan Metropolis Completed and Occupied—Ample Space Well Lighted Its Features.

By taking possession of its new factory and moving in, bag and baggage, the E. R. Thomas Detroit Co. has not only added to Detroit's already numerous colony of big automobile factories, but has given substantial evidence that it is not a mere "boarder" in the Michigan metropolis, but will make the city its permanent home. As will be seen by the accompanying illustration, the factory is of generous proportions and is three stories high. Its skeleton construction is reinforced concrete and the prodigal provision of windows is calculated to flood the manufacturing floors with light, the open location of the factory helping in this result. The interior arrangement of the various working departments is such as to bring the assembly along the length of the building in steady progress with a minimum of confusion and waste effort. In order to leave the floors unencumbered of stairways, the latter have been placed at the side of the building in structures of their own with open access to each floor. An ample site for the new factory, at Harper avenue and Dequindre street, was chosen to permit of subsequent enlargement when that may become necessary, and the completeness and quality of the plant equipment may be expected to have their reflection in the Thomas Detroit cars that will be turned out.



WHERE THE THOMAS DETROIT WILL BE PRODUCED

Apprenticeship to Develop Engineers.

What amounts to a high class apprenticeship system for budding engineers, has just been announced by the Daimler company of England, under the alluring style, the "motor scholarship." There are to be a Daimler major scholarships and four Daimler minor scholarships, the five students so enrolled to be given a two-year course in the shops of the company, together with theoretical instructions by graduate engineers, also under the supervision of the company. For the two years service, the holder of the major scholarship will be entitled to a salary of $500 per annum, and the holders of the minor scholarships, salaries of $100 per annum, a further agreement being entered into to the effect that the company may retain the services of the students after the expiration of their terms, and for a period of two years, at a salary of not less than $750.

A selection from the various applicants is to be made by means of an examination, to be held next July, Professor Sylvanus Thompson and Dr. Hele-Shaw having consented to conduct the test. A preliminary examination will be held in May, next, under the direction of the board of education, the most successful candidates being permitted to undergo the final and crucial test. The stated object is to develop men of ability who are desirous of entering the industry as a profession. The idea is an outgrowth of the difficulty already experienced by the Daimler company, in securing the services of competent persons in an engineering capacity.

Torsion Design for the Rear Axle.

In designing the torsion member of the rear axle, it should be borne in mind that in addition to the driving strains which it must resist, that is to say, the tendency of the axle to revolve with the wheels, an additional and frequently much greater strain is put upon it by the breaking action, which produces a similar force, appointed in the same direction. On several occasions, failures of torque rods have been observed, when after serving for a long time under ordinary driving conditions, a break down occurred at some time when the brakes were suddenly and forcibly applied. In the same connection, provision should be made for possible buckling of the torsion member, the layout being such that the action of the driving shaft and cardan joints will not be interfered with even in case of a considerable deflection of the rod.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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PROBLEMS OF FINDING A MARKET

They Confront the Accessory Maker with Perplexity—Merits and Demerits of the Several Solutions.

How best to market and advertise his new product is the question that confronts many a manufacturer of an automobile accessory and the choice of methods is often one of great perlexity. Advisers there are in plenty who will suggest all kinds of things, and out of the mass of counsel and warnings the manufacturer must select a selling plan adapted to the peculiar characteristics of his product.

It is in considering his relations with the jobber and the dealer that the manufacturer encounters his first problem. The jobber comes to him as a channel for wide and thorough distribution among the dealers, offering a selling organization such as it would take the manufacturer himself a long time to build up and reaching dealers in frequent visits whom the manufacturers' own salesmen would find too remote to spend railroad fare on for recurrent calls concerning only one article. Furthermore the jobber publishes a catalog in which, if satisfactory arrangements are made with the manufacturer, the latter's products are illustrated and described, and such publication, it is contended, has advertising value and serves to establish a new article as something recognized and standard.

Opposed to such considerations the manufacturer has the active or latent fear that thus to entrust the larger part of his relation with the dealer to the confiding hands of the jobber is to put himself to a great extent at the mercy of the latter, so that in the event of a disagreement as to prices the jobber can threaten an entire and immediate extinction of the manufacturer's market by closing his usual channels of sale with an abruptness that would leave him helpless until he could by advertising and organization once more get in touch with the dealers and the public. That such an interruption during the comparatively brief busy season would be disastrous, the manufacturer is too keen not to realize, and it is therefore with no little misgiving that he treats with the jobber as to having the latter handle his goods.

Cold contemplation of the nature of the jobber's business also induces the conviction that earnest as the jobber may be in his representations as to what his large corps of salesmen could do in presenting and pushing the manufacturer's product among the dealers whom they visit regularly, there is the likelihood that among so great an array of lines as the average jobber carries, the particular article in question may not be the subject of that whole-hearted pushing and work on the part of the salesman that the manufacturer might be lead to anticipate and that such special energy as is imposed on the salesmen is for goods that the jobber has overstocked or on specialties of his own on which he makes a high profit. Thus if the merit of an aritcle were such as to bring it into rapid popularity the jobber would collect his toll and prosper on it with no very substantial contribution to the hard work of introducing it other than having it listed in his catalog and his salesmen's price lists, while if the market were against it his salesmen would simply forget it and as cheerfully take orders for some more favored line or brand.

To demand a large order from the jobber in return for giving him the line is to invite the unpleasant possibility of his later "unloading" at cut prices and demoralizing the market, while to demand nothing of the jobber is to permit him to share in a "good thing',' if such it prove, without adequate service. There are difficulties in arranging to take back from the jobber an "overload" on a mutually satisfactory basis. In the past it has not been an unknown experience for a manufacturer to find that under an agreement of the sort the jobber has ordered greatly in excess of his probable needs in order to get an inside price, and to have a big overstock returned at the end of the season. The hardship on the manufacturer in making up goods in excess of the market is severe, and to have almost a season's profits wiped out at the finish by a returning flood of overstock is anything but joyous.

These and other reasons incline the average accessory manufacturer seriously to consider the building up of his own sales force, covering by mail those districts where his salesmen would find it unprofitable to travel. If his product be high in price and with a good margin of profit this method would seem to be feasible. Examples are offered in the case of gasolene storage tanks, speed indicators and other products where each individual sale involves a comparatively large sum, proving the manufacturer's own selling organization capable of handling the business in a profitable way. Territorial agents or sales managers, working on commission, and supported by the factory as to advertising and printed matter, when well organized and encouraged, are often able to develop direct retail business that could never be reached through the usual channels of dealer and jobber. The product may be of such a nature as to require "educational" selling, or the presentation of long and complete argument by the salesman either as to the use of the article itself or as to why the customer should buy that particular kind as against other similar devices. If its price be big enough to warrant the personal efforts of salesmen in following up customers, the manufacturer can in this way create business for himself that the jobber or dealer can hardly hope to get for him.

Owing to the competition in the tire business, the tire manufacturers have not been content to leave the sale of their tires to the jobber, assisted by such advertising campaigns as could be carried on in addition, but have thrown their own salesmen into the field to go after both dealers and owners as well as the manufacturers of cars. Here again is a product running up into high figures for each individual sale, and because tires have to be renewed periodically, time and energy spent in winning over a customer brings big returns. So thorough and complete is the selling organization of almost every one of the big tire companies that the jobber can offer little in the way of territory that is not already covered, and as a result comparatively few tires are handled in a strictly jobbing way, the trifling extra jobbers' discount that is allowed being insufficient to cover the cost of handling.

On the other hand the great majority of accessories for motor car use find their marketing channel through the jobber. His catalog bristles with the popular successes, and his salesmen are on a busy round all the time with the dealers, taking their orders and seeing that they are supplied. It is manifest that the jobber is not a mere burden on the business who has reached his present flourishing state by falsely deluding the manufacturers into the belief that their goods must be sold through him or not at all, and an analysis of the reasons that influence established manufacturers in renewing their arrangements from year to year to have the jobber handle their goods reveals to the newcomer wherein the jobber may be of material assistance and benefit to him.

Credits is the field in which the jobber shines and it is this that establishes his importance in the selling machinery. In an industry so new and so rapid in its changes the matter of credits is as difficult as it is important. Most dealers demand time, both because their capital is comparatively small and because automobile goods run into money so rapidly that it is necessary for them to wait until they actually sell the goods and get the money before they can pay. For the new manufacturer to attempt to extend credit generally among the dealers is to be certain of losses, proportionate in number and amount to his lack of information concerning the history, habits and resources of each individual dealer. This knowledge the jobber has gained through his own experience and the many avenues of information that are open to him. His salesmen are ever on the alert as to credits in the towns they travel, and can act as collectors on customers who are slow. For the manufacturer who is not exceptionally well equipped to take on the burden of a mass of credits with attendant clerical work, correspondence, collection fees and losses, the simplicity of doing business with the responsible jobber is an advantage not to be overlooked, especially as the better jobbers discount their bills every ten days, and have commercial ratings that

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are calculated to ease his mind on the question of whether he will get his money.

Only the strongest kind of a monopolistic position can permit the manufacturer who aims to do a large business throughout the country to deal direct with the retailers and insist on cash with order or C. O. D. delivery. Two objections influence the financially solvent dealer in not buying on this basis, and of substituting other goods whenever possible. The first is that in dealing direct with the manufacturer the goods are subject to separate and extra transportation charges greater than would be the case if they came in the regular shipments from the jobber with other goods, and that to order from the manufacturer entails the trouble of writing letters, the latter in the case of many dealers being the subject of a prejudice much more real and big than the reason that can be assigned for it. The second objection is that the C. O. D. system is an added expense, due to the charges for returning the money, while sending cash with order necessitates raking the cash drawer and buying a post office order or making out a check preparatory to asking for each shipment of goods. Then, too, there is that very human pride which the better class of dealers have in their honesty and financial responsibility, and which is offended by any policy which to their minds seems to assume them dishonest or financially irresponsible at the very start. That the manufacturer with a popular accessory which is in real demand can do business on this basis is certain, but that he greatly lessens his market and is handicapped by opposition on the part of jobbers and dealers, both anxious to push aside his products with substitutes, is equally certain.

In the earlier stages of creating demand and arousing dealers and the public to a realization of his existence and the merits of his product, the indifference of jobbers and dealers is a serious obstacle to be overcome unless a direct retail business is sought. If by heavy advertising the manufacturer has succeeded in engendering an interest among buyers, the usual course is for the latter to ask their dealers if they have the article for examination and sale, and it is at this point that trade indifference is transformed, either to trade opposition or trade co-operation, and one or the other the manufacturer must expect as he comes into prominence. The dealer, in the usual course, turns to his jobber to inquire as to whether the latter has it and as to its value and selling qualities. If none of the jobbers carry it or can quote him and he is not visited by a salesman from the manufacturer while the subject is fresh in his mind, the sense of probable profit will not be sufficient to impel him to write, and he will let the matter slide or tell his more persistent inquirers that he does not know anything about the article, but can show By the time the question has been fought them something that he does know is good. out with the dealer, as to cash with order and the like, only a very small part of the ripe "prospects" and possible customers are made into purchasers, their orders filtering through a reluctant dealer here and there or coming in direct by mail. The product may be so strong that its very merit alone will compel the dealer to handle it, but no matter how generous the discount, unless the price made him be one which he conceives is better than he could get by buying from the jobber or an "inside" over what other dealers get, he will handle it without enthusiasm, and subject to constant urgings from the jobber's salesmen to give his customers something bought with less inconvenience to himself.

In history, play and story the greed and ruthlessness of the "middleman" in grinding down prices and by various methods reducing those from whom he buys to dependence on his wish or caprice has been portrayed until the "middleman" is popularly regarded as an avaricious interloper in business transaction, with a penchant for creating ruinous price situations and a disordered market. That the jobber of to-day, in the automobile supply and accessory business, will seek any price advantage that he can obtain is only too true, but paradoxically enough there is no line of goods that the better class of jobbers prefer to handle than the "restricted" specialties the prices of which are set hard and fast by the manufacturer himself. The "restricted" specialties are those upon which the maker or sales agent sets fixed prices at which they are to be sold to jobber, dealer and retail customer, respectively, and sees to it that they are maintained. Such a plan, when properly carried out, absolutely removes the manufacturer's bugaboo of slashed prices on his own product.

In many ways an arrangement of this kind with the jobbers secures the manufacturer more certainly against the evils of having his prices reduced on occasion than would a complete selling organization of his own. Should a jobber, in his eagerness for business, go below the set figures on a popular but "restricted" article, the salesmen of other jobbers would learn of it all too quickly and the manufacturer would almost immediately be in receipt of complaints from the other jobbers handling his goods and also of requests from jobbers not having the line that it be taken away from the offenders and given to them, as they would not be guilty of such bad faith, etc. With his own salesmen in the field, each anxious to make a selling record with the office or to make as big commissions as possible, the manufacturer is too often dismayed to find that his prices have been cut for large orders and that the men have undersold in each other's territory through secret and underground arrangements of one kind or another. Public head-chopping in such cases is of some effect, but it is difficult to get men who have learned the lesson as well as the jobbers have through multifarious experience.

By selecting but one jobber in each of the great natural divisions of territory and keeping his goods out of the hands of the notorious price cutters, the manufacturer is in a position to demand special support from those with whom he has placed his line and arrangements for circularizing the jobbers' lists of dealers and owners can frequently be made, the cost of the work being shared to some extent, according to its character. The "restrictive" price system that is recommended requires very careful thought, and the retail price should be set to allow for the discounts that prevail for the majority of the goods that dealers and jobbers handle. As an aid to detecting the channels through which cut-price offerings have come, the plan of serial numbering and of keeping records of shipments with regard to their serial numbers is the best that has yet been found, and it demands very little extra work from the factory shipping clerk. Whether the goods be sold through jobbers or through salesmen employed direct, the system is of value in identifying both the time and course of shipment of any particular lot or single piece.

Success for any automobile accessory or specialty, as in the case of any other manufactured article, is basicly dependent on its merits and saleability at a price that the public will pay and which will at the same time yield a good profit. Having evolved such a product and being in a position to make it in quantities, the manufacturer must determine whether he will cast his lot with the jobbers, so to speak, or whether he will fight their opposition or indifference and have a complete selling organization of his own. In considering this question he has to reflect on the nature of his product and as to whether it needs back of it the work of persistent and especially trained salesmen to successfully place it with the retail trade and whether the jobbers are not already loaded up with similar articles which by reason of lower price or other considerations would get better attention and more enthusiastic pushing.

When the Body Needs Strengthening.

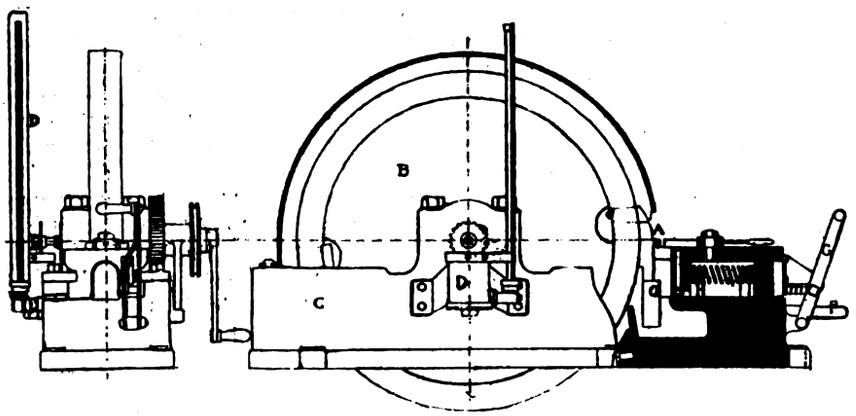
When a body which has been in use for some little time begins to show signs of flexure so that the door latches have to be turned forcibly in order to draw up the rear of the tonneau and close a very appreciable crack, it is high time the ironing was looked after and strengthened. In some instances where wooden frames are used, it is sufficient to reset the screws which hold the irons to the frame, or to replace them with larger ones. In others it will be found necessary to insfal an extra bracket or two at the point which shows signs of the greatest amount of working. In any case, the structure should never be permitted to remain in such a condidtion that the latches are required to carry any material load; as they must do when the effect of engaging them is to close up the opening between the door and the lintel.

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NEW DEVICE FOR TESTING STEEL

It Indicates the Exact Amount of Force Expended in Breaking a Bar—Details of the Mechanism.

Commonly speaking, all things relating to the production of iron and steel are looked upon as being too intricate for the comprehension of the average non-technical man. It is therefore not a little surprising to find that the methods of physical test, which are largely depended upon by the metalurgist in determining the properties of his product, are almost childishly simple in their nature. Nor does the nature of these tests and the apparatus by which they are effected become more complex in measure with the advancement of the science. A striking illustration of this fact is seen in the instance of the Guillery fragility machine, which was shown for the first time in this country at Madison Square Garden during the recent show, where it was staged immediately on its arrival from France, at the exhibit of the Carpenter Steel Co.



This device is, in effect, a form of impact machine, in which the test piece is broken by the first blow, the reading on a scale at one side showing at a glance exactly how many foot pounds of energy have been absorbed in effecting the rupture.

It is possible to break off a small notched bar of steel by means of a hammer, or by a weight swinging on the end of a pendulum arm, which traverses a known distance before striking the bar. With the primitive method of the simple hammer blow, nothing is known definitely except that the bar is broken by the shock. With the pendulum method, it is possible to calculate the amount of force expended in the blow. With the machine in question, however, no calculation is required, the indicator showing at once, exactly how much force has been expended. When it is further explained that the mechanism of this device consists of nothing more complex than a revolving disc carrying a hammer which strikes the blow, and a speed indicating device, which shows its rate of rotation before and after impact, together with a vise for holding the test bar, it appears that it presents no forbidding mechanical or theoretical stumbling block to the understanding.

A general idea of the construction of the Guillery machine may be obtained from the accompanying illustration in which, it will be observed, the wheel, B, mounted in substantial bearings on the bed casting, C, carries a single projecting tooth, or knife, A, firmly imbedded in its periphery. The wheel is set in rotation by means of a spur driving gear on the right side of the machine, which is adapted to be driven either by hand or by means of a V-belt, a clutch lever, F, serving to throw the gears out of mesh when a certain speed of rotation has been attained. The wheel shaft is mounted on ball bearings, and because of the comparatively great amount of its mass which is concentrated at the rim, runs practically without resistance, once set in motion. At the same time, the construction of the pedestal is such that a tremendous impact may be withstood successfully.

The part marked, H, is a movable anvil or chuck, in which the test piece is clamped, and which may be withdrawn from or advanced toward the wheel, according to circumstances, in such a way as to bring the end of the test bar into the path of the knife, A. The mechanism governing the motion of the anvil is interesting, since it provides for the positioning of the test bar under the knife immediately after the latter has passed the striking point, and ensures a full stroke and direct vertical impact.

To this end, a helical spring is arranged in such a way as to force the anvil constantly toward the wheel, that is to say, into a position in which the bar will receive the full impact. An interlocking latch within the anvil is arranged to engage a stop, retaining it and also the test piece out of the path of the knife, and in such a position that the full tension of the main spring is impressed upon it. A trigger rod, extending from the operating lever to a point adjacent to the wheel, and carrying a trigger piece on its inner end, is adapted to move longitudinally under the influence of the lever, and to rotate sufficiently to release the latch, releasing the anvil, when the trigger is struck by the knife. When the lever is pushed forward then, the rod is thrust into such a position that the trigger will come into the path of the knife, which immediately trips it, permitting the anvil to be thrown forward under the influence of its spring, so that the test bar also comes into the path of the knife, but immediately after the latter has passed the point of contact. In this way, the wheel makes a complete revolution after the bar is in place, and before the impact occurs.

The third, and most important element of the device, is the tachometer, D-D, mounted on the left side of the machine, which is provided with a double scale, reading both in revolutions per minute, and kilogrammeters, the latter indication, expressing the amount of energy stored in the wheel, at the speed indicated. This is perfectly possible, since the speed is the only variable factor entering into consideration.

In operation, the test piece is first placed on the anvil and clamped in position, after which the driving gear is engaged and the wheel set in motion and run until its speed, as indicated by the tachometer, exceeds a certain predetermined amount. The driving gear is then disengaged, by means of the clutch lever, and the speed brought down to the required point, by means of a brake, actuated by the same lever. The operator then draws back the controlling lever, which serves to withdraw the anvil to its extreme position and engage the latch. When the lever is pushed forward to its extreme position once more, the trigger rod is thrust forward, the trigger is snapped by the knife as it passes, and immediately afterward, the anvil is thrown forward by its spring so that the bar comes under the knife. The wheel then makes one complete revolution, when the knife impinges against the bar, breaking it off, and continuing to revolve, but at reduced speed.

The effect of the impact is to slow the wheel perceptably, though not to stop it. The tachometer reading falls to an indication corresponding to its reduced velocity, and from the difference of the first and second readings, the amount of force required to break the bar is read off directly. In other words, the initial tachometer reading gives an expression for the amount of energy contained in the moving wheel. A portion of this energy is absorbed by the impact, when the bar is broken. The second reading expresses the amount of energy contained in the wheel and due to its motion after the break has taken place. The difference of the first and second readings, must, therefore, indicate the amount of energy required to break the bar. Since the test pieces are all of standard size, the cross section of which is known, the determination of the force required to cause the rupture, bears a definite and known relation to the ultimate strength of the material under test, in terms of force per unit of section, that is to say, in kilogram meters per square millimeter, or, its equivalent in foot pounds per square inch.

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SKIDDING AS A FACTOR OF SAFETY

Curious Theory Advanced by a French Mechanician—Engineering Argument on Which It is Based.

It has remained for Georges Marié, a French mechanician, to discover that skidding affords an actual protection from overturning—that instead of being an absolute evil, it is, at times, a means of safety. His idea is that the side slip furnishes an outlet for a certain amount of energy developed as a result of centrifugal force, which otherwise would serve to capsize the car. In proof of this, he states that motor cars frequently make turns safely—as a result of this automatic compensation, which under similar circumstances would overturn railway cars, because they are confined to the rails and have no such outlet for the side stress due to the turn.

Mr. Marié's ideas are contained in a treatise presented to the Society of Civil Engineers which discusses the question of oscillation in railway trains on entering and leaving a curve. He has endeavored to fix the conditions that must be satisfied by the track and rolling stock, that these oscillations may be dampened and limited to an amplitude within the danger of derailment. For automobiles there is no danger of leaving the track, but great danger of overturning, and with some modifications Marié's conclusions about trains apply also to automobiles. Now the author shows that chauffeurs, even the most prudent, often take curves with radii of curvature much smaller than would suffice to overturn a railway car, other things being equal. If the wheels were guided and held by rails, there would certainly be an accident; what saves the chauffeur and his vehicle is the lateral skidding that re-establishes the equilibrium endangered by centrifugal force.

Again, the lateral sliding has a powerful protective effect even when it is too slight to show on the track. Marie shows that in practice the wheel marks are broadened only 8 millimeters (⅓ inch) for a centrifugal force double that which would overturn a railway car under the same conditions.

When there is no sidewise motion, for whatever cause, at the moment of taking a sharp curve, the car runs real danger. The impossibility of such motion is encountered in two practical cases. First we have the bursting of a tire during a sudden turn—no imaginary case, since such turns impose on the tire a transverse strain that it is ill prepared to support—when the iron rim strikes the road and prevents all lateral motion. Secondly, there is the case of an automobile that turns suddenly on striking a soft, sandy road.

A turn of 10 meters (33 feet) radius is generally to be made only in an emergency, to avoid running over some one, for instance. If the wheels are 1.4 meters (55 inches) apart and the center of gravity 0.9 meter (35 inches) above the ground, calculation shows that an upset would take place in this case with a speed of only 31 kilometres (19 miles) an hour, if the protective skidding did not take place. With 20 metres (76 feet) as a radius, turns are often made at more than 43 kilometres (27 miles) an hour; here again the lateral slip is the safety valve for the rash.

If the road is inclined, there is not so much chance for an upset; this result is paradoxical, but it is capable of explanation; for although a slope increases the tendency to upset, it also increases the tendency to slide sidewise, which more than makes up for it. The side-slip, however, in such conditions, easily becomes excessive, and in many cases the auto escapes overturning only to break a wheel against the curb or to smash against a tree. To sum up, chauffeurs may turn corners at speeds much higher than would cause an upset on a railroad in identical conditions, but it is frightful to think, says Mr. Marié, of the danger of very high speeds, where chauffeurs are threatened with death at every instant.

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WEIGHTED WITH ACCESSORIES

Why Some Cars Prove Heavier than the Makers Represented—What May Compose the Added Burden.

It not infrequently happens that the purchaser of a new car is considerably surprised on weighing it, to find that its avoirdupois falls considerably over that given by the catalogue. This inconsistency, which probably is not more frequently remarked because comparatively few owners go to the trouble of having their cars weighed, is an extremely common one. While in some degree it is chargeable to the inaccuracy of the maker in numerous instances, in perhaps a greater number the difference in nominal and actual weight is due to the load of accessories with which the machine is saddled the moment it passes into private ownership. Individually, the weight of these articles is inconsiderable, but in the aggregate, they provide a burden on the engine which not infrequently is equivalent to the weight of an additional passenger.

With the idea of ascertaining as closely as possible just what the extra weight of an average car may be after it has been put into commission, a foreign periodical has gone to the trouble of weighing separately a vast number of useful things, such as many motorists love to include in their outfits, grouping them as necessary or desirable, according to their nature. The total makes it appear that the ordinary outfit required for a car of less than 20 horsepower, will amount to upwards of 120 pounds, while for a car of between 20 and 40 horsepower, the weight of necessary accessories is increased to upwards of 150 pounds. The weights quoted, applying as they do, to fittings of British make, naturally work out heavier than would the corresponding articles made in this country. The summation is illustrative of the point in question, however, and as a matter of fact it is doubtful if the average large touring car often gets on the road with less than 200 pounds of traps—needful or otherwise.

The weights of the accessories usually carried on a car of less than 20 horsepower, are given as follows:

	lbs.	ozs.
Double coil Castle horn	3	0
Headlight, single, 7-in. face	4	10
Headlight generator	5	8
Pair side lamps, Castle, Model R.	10	4
Back lamp, Castle, Model R1	2	4½
Tire carrier, for back of car	1	15
Inflator with gauge	3	6
Tangye jack	9	3
Spare Dunlop non-skidding tire, 815x105	24	8
Spare Dunlop inner tube	3	7
Tire repair outfit	3	9
Tire gaiter and lace	1	0
Tire levers, two	1	4
Petrol funnel	0	12
Tool kit	8	0
Quick Grip spanner	0	8
Valve lifter	0	6
Box of split pins and nuts	3	4
Four L. M. sparking plugs, in boxes	1	1
Two-gallon tin petrol	17	10
Half gallon lubricating oil	5	10
Oil can	0	12½
Two lengths insulated wire and insulating tape	1	0
Set of asbestos washers	0	4
	123	2

For a car of more than 20 horsepower and less than 40, the corresponding weights work out thus:

	lbs.	ozs.
Large horn	4	9½
Bleriot headlight, two, Model A, 11-in. lens	26	0
Bleriot generator	9	15½
Bleriot brackets	4	12
Two Castle side lamps, Model SI.	10	8
Dependence rear light	2	3½
Set of Castle tire carriers, side	4	4½
Inflator, with gauge	3	6
Tangye jack	10	2
Spare Continental tire, 875x105, round tread	22	8
Spare Continental tube, in cardboard box	4	11
Tire gaiter and lace	1	0
Tire repair outfit	3	9
Tire lever, double end	1	8
Petrol funnel	0	13½
Tool kit	8	0
Set of box spanners	2	0
Quick grip spanner	0	8
Valve lifter	0	6
Box of split pins, nuts, etc	3	4
Four Pognon plugs, in cases	1	2¾
Two-gallon tin of petrol	17	10
Canvas tire bag	1	3
Half pint oil can	0	12½
Petrol squirt	0	3
Grease injector	0	12½
Two lengths electric wire and insulating tape	1	0
Set of asbestos washers	0	4
One gallon Castle lubricating oil.	10	15
	157	15¼

But in addition to these things, many motorists carry certain articles of greater weight than those already enumerated, and others not included in the list. These are given in the following table, together with the weights of the parts which they are supposed to replace in certain cases:

	lbs.	ozs.
Siren complete	7	6½
Set of three electric side and tail lamps, with 40 a.h. accumulator and switch	16	2
Southall tire tester, in case	0	12
Canvas water bucket	0	14
Stepney spare wheel complete, but without tire	36	3
Tangye jack	10	2
Cleaning outfit, Castle	15	12
Castle electric hand lamp	2	4
Rubber spring buffers, four	2	7
"What is Coming" mirror	2	8
A. R. A. car vulcanizer	3	12
Greenwich dash clock	1	6½
Speen indicator, Jones	11	0
Electric steering pillar lamp	1	4
Tail lamp indicator	0	8
Spare tube case (three tubes)	4	1½
Petrol gauge, Model H	0	14
Chain tightener	1	6
Driver's indicator, with accumulator	8	0
	126	10½

Parts replaced:

	lbs.	ozs.
Horn	4	9½
Set of three paraffin lamps	12	11½
Tangye jack, medium	9	3
Canvas tire bag	1	3
	27	11

Thus the total weight of supplies and accessories for a car of the second class, as obtained by subtracting the weight of parts replaced from the total weight of additional equipment, and adding the remainder to the weights of necessary accessories, works out at 256 pounds 14¾ ounces. From a further tabulation, it is also made to appear that quite a little difference in weight may be caused by the choice of the accessories installed on the car. A surprising amount of difference is thus brought out in the case of the ignition devices alone, as follows:

	lbs.	ozs.
Eisemann Model A magneto, complete	33	11½
Castle four-cylinder coil, 40 a.h. accumulator (in box), contact breaker and switch	28	2½
Simms-Bosch magneto, Type DHh, four-cylinder, fitted with driven gear wheel	36	0
Eisemann Model A magneto, with dual coil and 40 a.h accumulator	40	4½
Castle single special coil, 40 a.h. accumulator (in box), distributor, and switch	20	0
Eisemann Model B magneto	24	4
Eisemann Model C magneto	17	0

A still further differentiation is developed by comparing the weights of several other accessories such as are likely to be carried on the average "well found" car:

	lbs.	ozs.
Wagner electric horn, complete with accumulators	14	7
Castle accumulator, 20 a.h.	4	13
Castle accumulator, 40 a.h., in tin case with strap handle	10	9
Castle accumulator, 60 a.h., in tin case, with strap handle	14	11
Four Pognon sparking plugs in cases	1	2¾
Four L. M. sparking plugs in cases	1	1
Four De Dion sparking plugs in cases	0	15
Four1cylinder Castle coil	16	5½
Castle single coil, for distributor.	5	2
Distributor complete	4	0
Castle single-cylinder coil, ordinary	1	14
Castle single-cylinder coil, enclosed terminals	4	12
Castle single-cylinder coil, De Luxe	5	3
Eisemann dual coil	10	10

While the owner is quite likely to feel the cost of an elaborate assortment of extras, the chances are that he seldom realizes how much difference their weight is likely to make in the actual running of the car, both in mileage, rate and in cost of maintenance. When the matter is considered in the light of carrying or not carrying the equivalent weight of an extra passenger all the time, however, the advantage of reducing the equipment to the lowest possible minimum is at once apparent.

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CALCIUM CHLORIDE FOR ROADS

Its Dust Laying Qualities Successfully Tested in Massachusetts—The System Employed in Its Use.

Dealing with the problem of dust on roads experiments have been made along three lines, each considered by its advocates to be the most promising. The use of oil, either in its crude state or as an emulsion, has given results that satisfied those persons interested. The same is true concerning the use of tar in one form and another. A method employed extensively on the roads in that part of Massachusetts known as the North Shore is the sprinkling of the surface with a solution of calcium chloride, which has a strong affinity for water, attracting it from the atmosphere and the earth, and retaining it for a considerable period.

Experiments with this chemical, made abroad, came to the uotice of Colonel Sohier, a North Shore resident, during the summer of 1906. He resolved to repeat the experimenting here, it is stated by the Boston Evening Transcript, and first treated a short stretch of road. The calcium chloride was purchased in crystal form at $15.40 a ton. The crystals were broken up and dissolved in watering carts, one pound of the chemical being mixed with one gallon of water, and from one-half to one-third gallon of the mixture being applied to each square yard of road surface. After two applications it was found that the dust was laid and could be kept down by occasional sprinklings with water.

The success of the first experiment determined Colonel Sohier and his associates this summer to enter much more extensively into the "salting" of the roads and it was decided to treat the Shore Road, a macadam highway from Beverly Cove to the Manchester line and adjoining roads, a total of ten miles, the money for the work being raised by subscription. With this large project in hand a central plant was necessary for preparing the solution. The calcium chloride treatment, which was done by contract, was begun early in the season and was discontinued on November 1, and it has been found that, including the cost of the plant, the cost of applying the chemical for a longer season has been slightly more than the cost of sprinkling with water alone. Not counting the cost of the plant, which is available for years to come, the cost of the calcium chloride treatment was less, the figures being .027 cents per square yard for the season with the chamical and water and .03 cents for sprinkling with water alone for a season of six months.

The calcium chloride laid the dust absolutely for twenty-four hours a day, whereas under the former plan of sprinkling with water four times a day mud and dust alternated. The chemical prevented any ravelling of the top surface of the macadam highway. Six applications of the calcium chloride were made, two in June, one in July, August, September and October, and on dry days throughout the season the road was sprinkled with water once a day. The results of using one watering cart instead of three and watering once a day instead of four times have been much better and dust has been practically eliminated. The surface of the ten miles of road was treated over a strip eighteen feet wide, making 103,000 square yards, and the cost by contract, including the plant, was $331 a mile, Though the sprinkling of the road was stopped November 1, the road is now free from dust.

Colonel Sohier states that the calcium chloride used this summer was bought in solution, instead of in crystals, and was brought to the Beverly Farms station in tank cars holding 6,000 gallons each. It was pumped from the cars into a tank. For applying the chemical a special watering cart was used. Its tank has a capacity of 600 gallons, but on account of the weight of the solution no more than 500 gallons was taken at a time. A hose leading from the bottom of the cart tank was used for drawing off the solution, and a rack in the rear held five large galvanized iron buckets, each of a capacity of 100 gallons.

The watering cart was filled with 500 gallons of 40 per cent saturated solution of calcium chloride at the central plant. Then the cart was driven to the first hydrant along the road to be treated. At this point 100 gallons of solution was drawn off into one of the buckets. At four other points the filled buckets were left. By the means of a special appliance patented by B. P. Richardson, the contractor, the 100 gallons of calcium chloride from the last bucket was syphoned back into the cart, together with the water from the hydrant, reducing the calcium chloride solution to about 8 per cent., which was sprinkled on the road in the same manner as water. At the other hydrants the process was repeated, the buckets being picked up as they were emptied. One carload of the 40 per cent. solution was made to cover five-eighths of a mile.

The Shore Road is a State highway and was built two years ago of the best macadam. It showed signs of ravelling from automobile travel, especially on the corners, and was sanded with a light sprinkling of coarse screened gravel. The whole road was sanded twice and parts of it four times. The calcium chloride through its property of holding and attracting water, kept the top surface of the road in such condition that it did not ravel or wear down to the stones although it is narrow and the travel is extremely heavy. One Sunday last summer, according to a record secured, 1,100 vehicles passed a given point in Beverly Farms in ten hours. About 650 of them were automobiles. In Manchester automobiles have averaged at certain times of day three a minute for an hour.

A valuable property of calcium chloride is its weight. Even if the road surface becomes so dry that dust rises, the fastest moving vehicle does not lift the dust above its hubs and it settles at once into the road. The chemical has no smell and no injurious effects have as yet been discovered; it keeps the dust laid on the surface of the road, and, if properly and economically applied, is undoubtedly better than water and probably cheaper, because with its use two-thirds of the cost of watering carts can be dispensed with, which saving should more than pay for the chemical itself and the extra cost of applying it.

Moral Character Required in Drivers.

Before obtaining a license to drive an automobile in Colorado Springs, a person will have to prove he is of good moral character and is possessed of steady, temperate habits, according to the provisions of an ordinance just passed by city council. The speed limit was fixed at 12 miles an hour within the fire district, 18 miles outside, and 8 miles when rounding corners or passing street cars. Visitors are privileged to drive a car three days without a license and may have that period extended to thirty days, by paying 25 cents to the city clerk. The Board of Examiners to pass upon an applicant for license will consist of the Chief of Police, a representative of the Colorado Springs Automobile Club and a member of the City Council.

Neglected Bridge Causes Law Suit.

J. I. Hetzel, an Altoona (Pa.) dealer, has brought suit against Adams township for damages sustained in an automobile accident which he claims to have been caused by failure of the township authorities to repair the approach to the bridge over the South Fork branch of the Conemaugh River. The plaintiff claims that his head was badly battered, his leg wrenched and three ribs broken. He asks $2,000.

Punctures Caused by Prickly Pears.

Automobilists in certain parts of Montana are having troubles with prickly pears. It is said that great patches of them cover some parts of the roads and that spear-like projections cause slow punctures in inner tubes that make a driver forget his early training. One tourist said his tires were punctured nine times from two or three pears.

Automobilist Sues City for Damages.

Because a trolley company failed to keep a street in Plainfield, N. J., in proper condition while laying tracks, John McCullogh has presented a claim against the city of Plainfield for a broken spring on his car. The accident was due to the torn up condition of the streets, but the city intends to fight the suit, claiming the trolley company is responsible.

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The Week's Patents.

864,778. Lubricating Device. Harry C. Gamage, New York, N. Y., assignor, by mesne assignments, to Oil-Bath Lubricator Co., a Corporation of New Jersey. Filed April 5, 1907. Serial No. 366,474.

1. A rotary shaft, an endless lubricant-conveying belt in contact with said shaft and wholly disposed on one side of the axis of rotation thereof, and mechanism for transmitting motion from said shaft to said belt.

864,821. Explosive Turbine. Heinrich Zoelly, Zurich, Switzerland. Filed May 22, 1905. Serial No. 261,583.

1. In a gas or fuel explosion turbine the combination with the explosion chamber and the turbine of an always open expansion nozzle; pumps for compressing the air, steam and fuel; admission valves for these media to the explosion chamber, and means for controlling the same whereby the air and fuel are supplied to said chamber at the time when the pressure therein has dropped to be equal to the pressure of the compressor pumps; an ignition device; and means for controlling the ignition—substantially as and for the purpose specified.

864,824. Variable Speed Gearing. John S. Barnes, Rockford, Ill., assignor to W. F. & John Barnes Company, Rockford, Ill., a Corporation of Illinois. Filed June 6, 1907. Serial No. 377,601.

A variable speed gearing comprising a suitable support, a driving shaft, a sub-shaft and a driven shaft held in proper relation by the support, a spur gear loosely mounted on the driving shaft and provided with a clutch face, a spur gear fixedly connected to the sub-shaft and meshing with the above mentioned gear on the driving shaft, two gears of varying diameters mounted on the driving shaft to revolve in unison, one of said gears provided with a clutch face, a movable double faced clutch section having a driving connection with the driving shaft and adapted to engage the clutch faces of the gears on the driving shaft, two spur gears of varying diameters loosely mounted on the sub-shaft and each provided with a clutch face and in mesh with the two connected wears on the driving shaft, a movable double faced clutch section having a driving connection with the sub-shaft and adapted to engage the clutch faces of the gears on the sub-shaft, two spur gears of varying diameters loosely mounted on the driven shaft and each provided with a clutch face, and in mesh with the two connected gears on the driving shaft, and a movable double faced clutch section having a driving connection with the driven shaft and adapted to engage the clutch faces of the gears on the driven shaft.

864,830. Explosive Engine. Homer Charles, Rapid City, S. D. Filed Feb. 10, 1905. Serial No. 245,096.

1. In an explosive engine, the combination of the working chamber, the pump chamber, a mixing chamber intermediate the pump and working chambers, and through which the air is passed from the pump chamber to the working chamber, means for normally isolating said mixing chamber from the other chambers, and means for venting said chamber to reduce any retained pressure therein before the oil is admitted thereto, substantially as described.

864,831. Thermostatic Regulator for Explosive Engines. Homer Charles, Rapid City, S. D. Original application filed Feb. 10, 1905. Serial No. 245,096. Divided and this application filed March 2, 1906. Serial No. 303,840.

1. In an explosive engine, the combination of a working chamber, a mixing chamber, an igniter head in the working chamber, a valve controlling admission of fuel or water to said mixing chamber, and a thermostat passing through the igniter head and protected thereby from direct contact with the hot gases, and connections between said thermostat and the valve to regulate the temperature in the working chamber, substantially as described.

864,841. Vehicle Rim. Louis B. Gast and Jacob Gast, Jr., Akron, Ohio. Filed March 13, 1906. Serial No. 305,824.

1. A vehicle wheel rim of the class described, comprising a tire seat having a tire retaining means along one side thereof and provided on the other side with a channel below the tire seat with an outer wall extending approximately as far as the plane of said tire seat, said outer wall of said channel being provided with an interrupted series of notches occurring at approximately regular intervals except at the point where a notch is omitted and an endless ring having its outer portion shaped to constitute a tire retaining element with its base approximately flat and of sufficient width to cover said channel, provided on its inner face with an uninterrupted series of inwardly projecting lugs spaced apart from each other a distance equal to that intervening between the notches in the side wall of said channel whereby in seating said ring one of the lugs may be passed over the uncut portion of said outer wall and the balance of the ring swung laterally into position, the balance of the lugs on said ring passing through the notches in said wall and interlocking with those portions of the wall between said notches.

864,844. Hydrocarbon Engine. Edmund Hudson, Templeton, Mass. Filed July 28, 1904. Serial No. 218,565.

1. In combination with a hydrocarbon motor having a combustion chamber and an air compression chamber, an air passage intermediate the air compression chamber and combustion chamber, a piston arranged to control the passage of air intermediate said chambers, a crank shaft, a hydrocarbon pump chamber irrespective of the position of its piston and means intermediate the crank shaft and pump for operating said pump piston, and an opening and closing injection nozzle operatively arranged with reference to the pump and combustion chamber.

864,857. Automatic Oiler. Andrew P. Olson, Chicago, Ill. Filed Jan. 11, 1907. Serial No. 351,796.

1. In an apparatus of the class described, a pump comprising a cylinder with an intake port and an output port, a piston rod adapted to work within the cylinder, a spring-pressed piston mounted loosely upon the piston rod and working to open and close the output port, and a piston mounted rigidly upon the piston rod and working to open and close the intake port.

864,877. Explosive Engine. Ellis J. Woolf, Minneapolis, Minn., assignor to The Woolf Valve Gear Company, Minneapolis, Minn., a Corporation of Minnesota Filed Jan. 6, 1906. Serial No. 294,862.

1. In an explosion engine, the combination with means for introducing and exploding an explosive agent within the explosion chamber, of a water pump operated by the engine and having a delivery connection to the explosion cylinder, a by-pass and a double acting check valve, in the connections from said pump, subject to the pressure from the working cylinder of the engine for closing the by-pass and permitting the water to be forced by the pump into said cylinder, substantially as described.

864,903. Transmission Gear. Arthur J. Morris, Torrington, Conn., assignor to Adelbert P. Hine, Torrington, Conn. Filed Dec. 6, 1905. Serial No. 290,622.

1. A power transmitter comprising a driving member, a driven member, gearing connecting the members and arranged in a train having selective branches, said gearing including planetary gears common to both branches, and means for retarding in varying degree the motion of the planetary gears in their orbit about the other gears of the train to vary the speed of rotation of the driven member.

864,904. Transmission Gearing. Arthur J. Morse, Torrington, Conn., assignor of one-half to Adelbert P. Hine, Torrington, Conn. Filed Feb. 19, 1906. Serial No. 301,860.

1. A power transmitter comprising a driving member, a driven member, a plurality of gears interposed between the members, a selective clutch device controlling direct transmission from one member to the other and the disconnection of the gears from both members and indirect transmission through the gears, and means for varying the relative speed of the gears.

864,905. Transmission Gearing. Arthur J. Morse, Torrington, Conn., assignor of one-half to Adelbert P. Hine, Torrington, Conn. Filed June 13, 1906. Serial No. 321,471.

1. A power transmitter comprising a driving member, a driven member, gearing interposed between the driving member and the driven member including a plurality of sets of speed changing gears arranged on parallel axes, a clutch device controlling direct transmission from one member to the other, the connection of the gears with the driving shaft and indirect transmission through the gears, and means for varying the speed of the gears.

864,906. Transmission Gear. Arthur J. Morse, Torrington, Conn., assignor of one-half to Adelbert P. Hine, Torrington, Conn. Filed Oct. 20, 1906. Serial No. 339,857.

1. In combination, a driving member, a driven member, normally operable gearing including planetary gears connecting the members and arranged in a branched train, means for retarding in varying degree the orbital motion of the planetary gears common to the several branches, and a clutch mechanism selectively operable to connect said driven member with any one of said branches and further operable to directly connect said members and disconnect the gearing therefrom.

864,911. Vehicle Wheel Rim. James M. Padgett, Topeka, Kan. Filed May 3, 1906. Serial No. 315,037.

In combination with a wheel rim having an annular groove, an annular detachable clenching flange to enter said groove and bear against a tire, said detachable clenching flange being cut to form separable, reversely-beveled ends, one to overlap the other, said ends and the said wheel rim being provided with co-acting studs and stud-receiving openings to lock said clenching flange in place, the stud which secures the underlapping end of the detachable clenching flange being movable and having a

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spring to normally hold it in locking position.

864,914. Spring Equalizer. John Raab and Andrew Raab, Tacoma, Wash. Filed Jan. 16, 1906. Serial No. 296,372.

1. In a device of the character described, the combination with a support, of an elliptical spring carried by said support, a stationary member provided with a hollow post, carried by the lower portion of said elliptical spring, a reciprocating member adapted to reciprocate in said post a slidable member positioned upon said stationary member and surrounding said post, a coiled spring positioned upon said slidable member and surrounding said post and reciprocating member, fastening means for securing said coiled spring upon said post and reciprocating means, and means connecting the upper portion of said elliptical spring and said slidable member.

864,926. Cellular Pneumatic Tire. Edward C. Schoonmaker, Perham, Minn. Filed Nov. 23, 1906. Serial No. 344,723.

1. A tire of the character described comprising a rim section having annular side flanges, a tire provided with similar flanges to engage the flanges of the rim section, non-heat conducting material upon the flanges of the tire and metallic fastening bands shrunk upon the tire flanges for clamping the latter to the rim flanges, said bands being engaged with said non-heat conducting material to prevent the heat generated in the bands from injuring the tire, substantially as set forth.

864,979. Rotary Engine. John A. Mosher, Chicago, Ill., assignor to The Adams & Westlake Company, a Corporation of Illinois. Filed Aug. 27, 1906. Serial No. 332,207.

1. In a rotary engine, in combination, a casing, a rotatable head with the casing and having in its periphery a transverse pocket whose walls are curved to the arc of a circle, and an oscillating wing of sheet metal bent to form a hub conforming to and fitting within the pocket.

864,983. Spare Tire Holder for Automobiles. Leo P. McKinney, Boston, Mass., assignor of one-half to John L. Snow, Boston, Mass. Filed May 14, 1906. Serial No. 316,663.

1. A spare tire holder for automobiles, having, in combination, a base, and a bracket secured thereto by a bayonet joint and provided with means for holding a tire, the bayonet joint including two interlocking engaging surfaces of which one is inclined so as to have a wedging action and to take up lost motion between the parts when the joint is locked, substantially as described.

864,985. Buffer. Andrew P. Olson, Chicago, Ill. Filed Dec. 19, 1906. Serial No. 348,552.

1. In an apparatus of the class described, the combination with a pair of coil springs of a buffer bar, a pair of attaching pieces for securing the rear ends of the spring to the frame of the vehicle, and a pair of attaching pieces for securing the buffer bar to the front ends of the springs.

865,002. Vehicle Brake. Bartholomew Viola, Brooklyn, N. Y. Filed Aug. 30, 1906. Serial No. 332,563.

1. In a vehicle brake, the combination with an axle and a pair of wheels carried thereby, of a clutch member secured to each of the wheels on its inner side, a pair of clutch members slidable on the axle into engagement with the said clutch members respectively, means for simultaneously shifting the latter clutch members in opposite direction to engage and disengage the wheel clutch members and adjustable means for insuring the equal engagement of the two slidable clutch members.

865,009. Internal Combustion Engine. Charles Brizzilara, Richmond, Va., assignor of one-half to Dominic Leveri, Richmond, Va. Filed March 27, 1907. Serial No. 364,872.

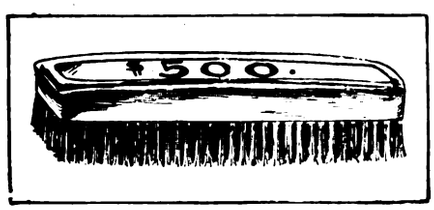
1. In combination with a water jacketed engine, a storage tank, return and supply pipes connecting the jacket with the tank, means automatically actuated by starting the engine for opening both said pipes, said means comprising a spring-pressed piston and air forcing devices, and means for draining this jacket, these latter means being operated by the stopping of the engine.

865,028. Vehicle Tire. George O. Kankboner, Cleveland, Ohio. Filed Oct. 29, 1906. Serial No. 341,044.

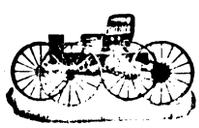
1. In spring cushioned wheel tires, a unitary member comprising a shell of two diameters, a shoe adapted to take the tread of the wheel located in the larger part of said shell and a plunger and spring behind said shoe in the smaller part of the shell, said parts constructed to be removed and replaced together.

865,072. Vehicle Wheel. Ira Abbott, Wyandotte, Mich. Filed Jan. 7, 1907. Serial No. 351,040.

1. In a vehicle wheel, the combination with a rim and a hub, of outwardly extending flanges on the hub forming a groove between, S-shaped springs secured at their outer ends to the rim and having their inner ends overlapped within the groove, and bolts passing through the overlapped ends of the springs to secure the same to the hub.



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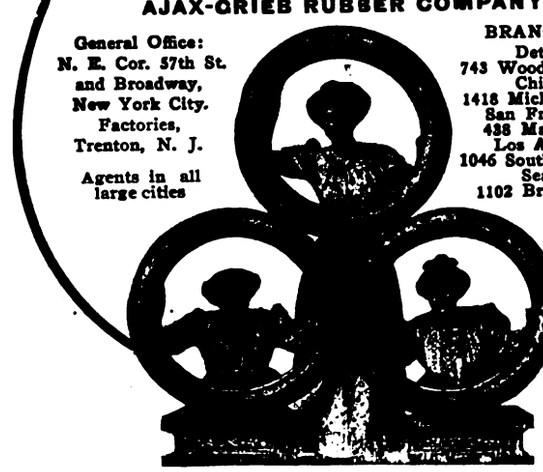
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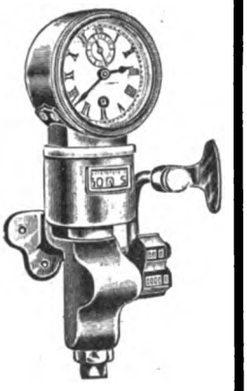
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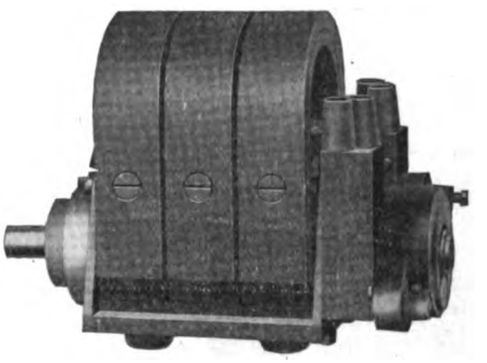
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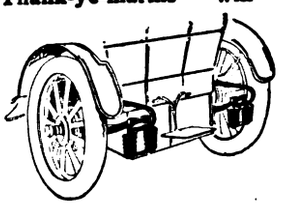
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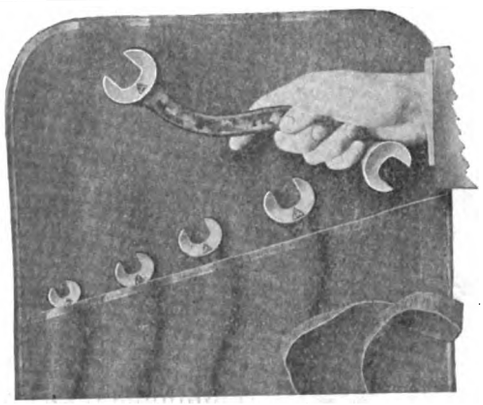
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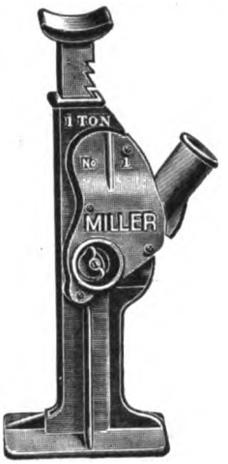
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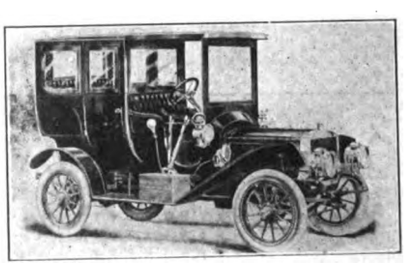
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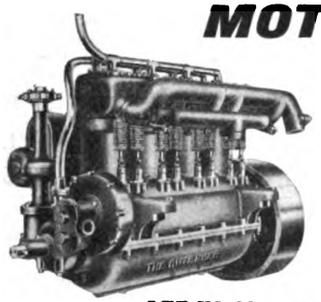
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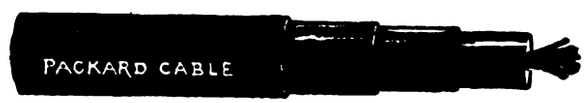
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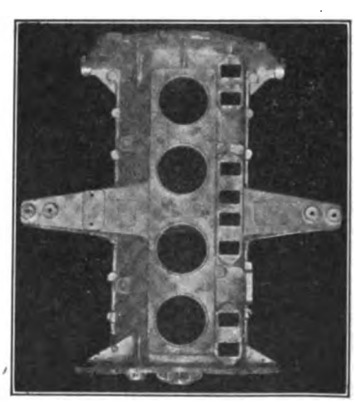
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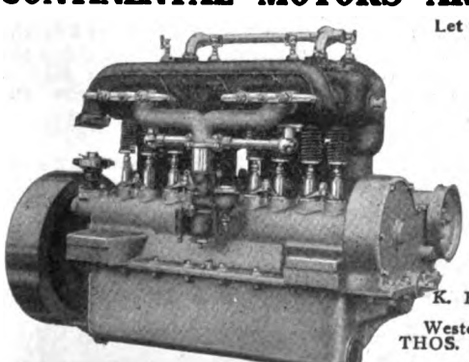
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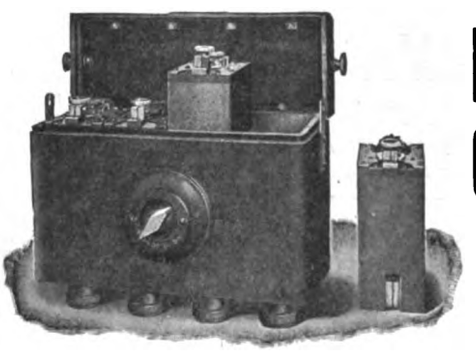
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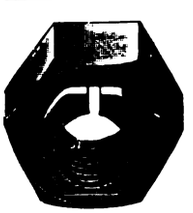
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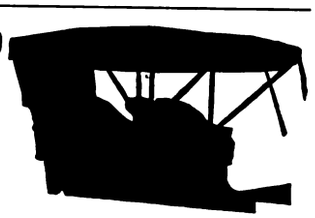
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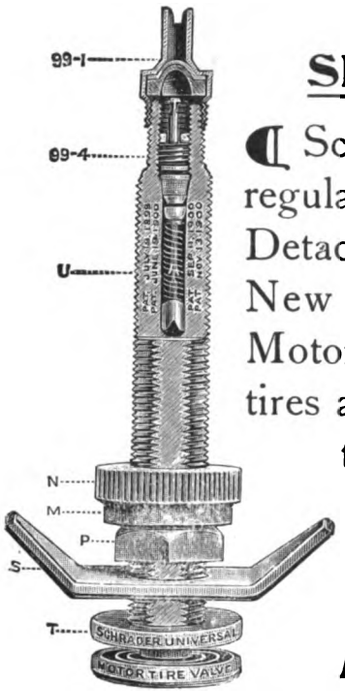
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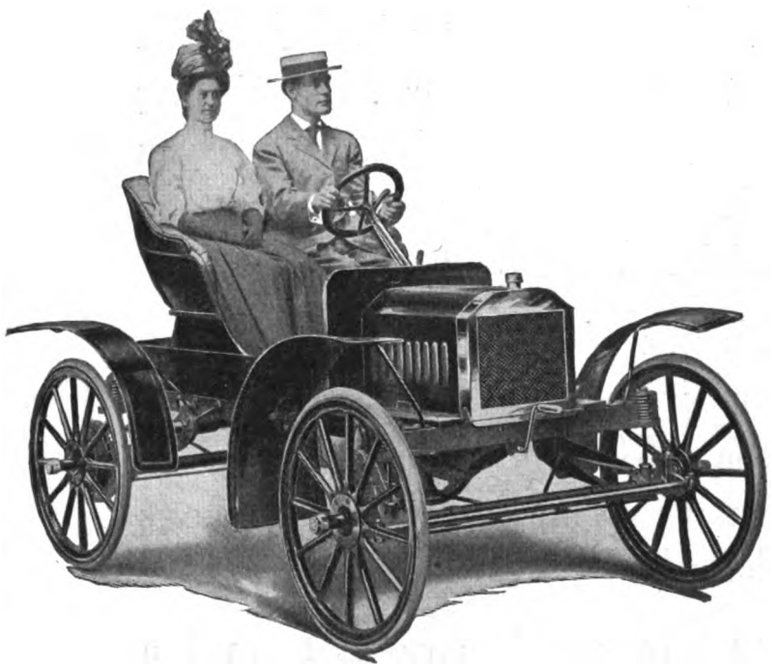
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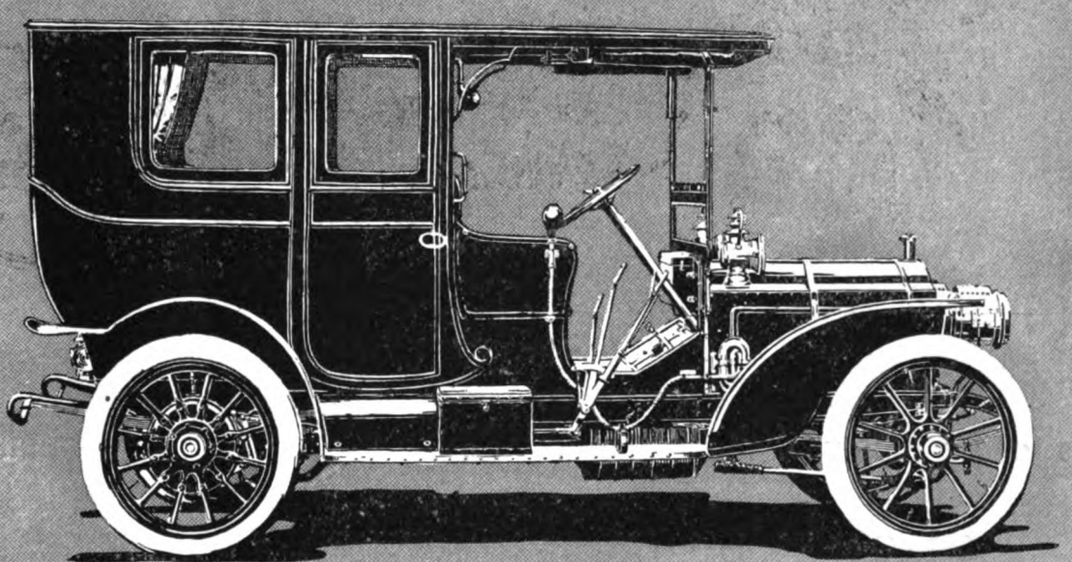
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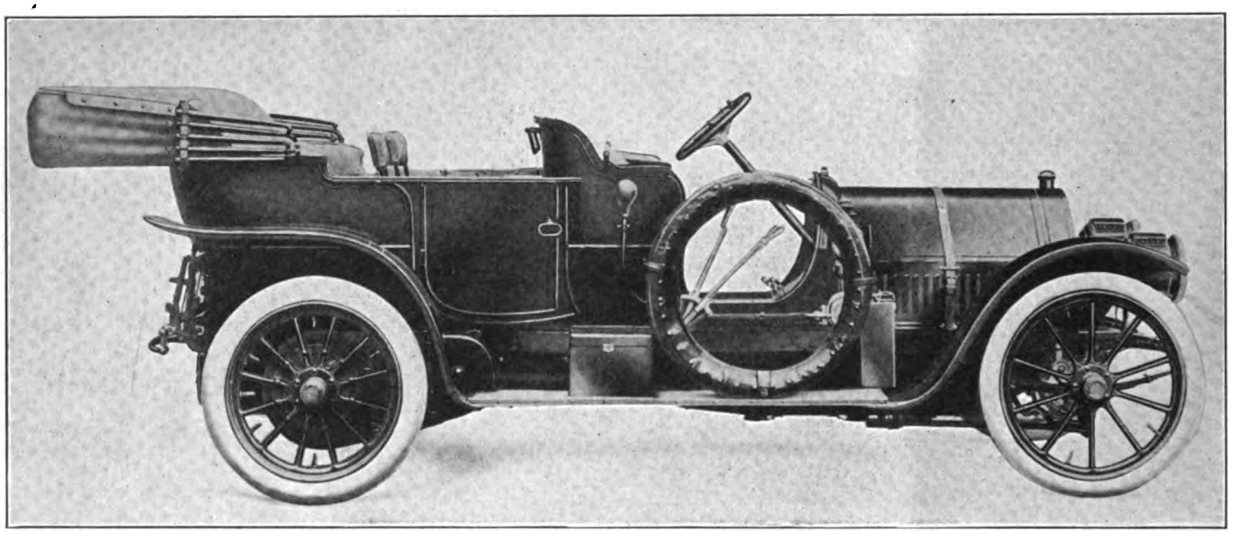


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7th—An aggressive advertising and publicity campaign is being pushed.

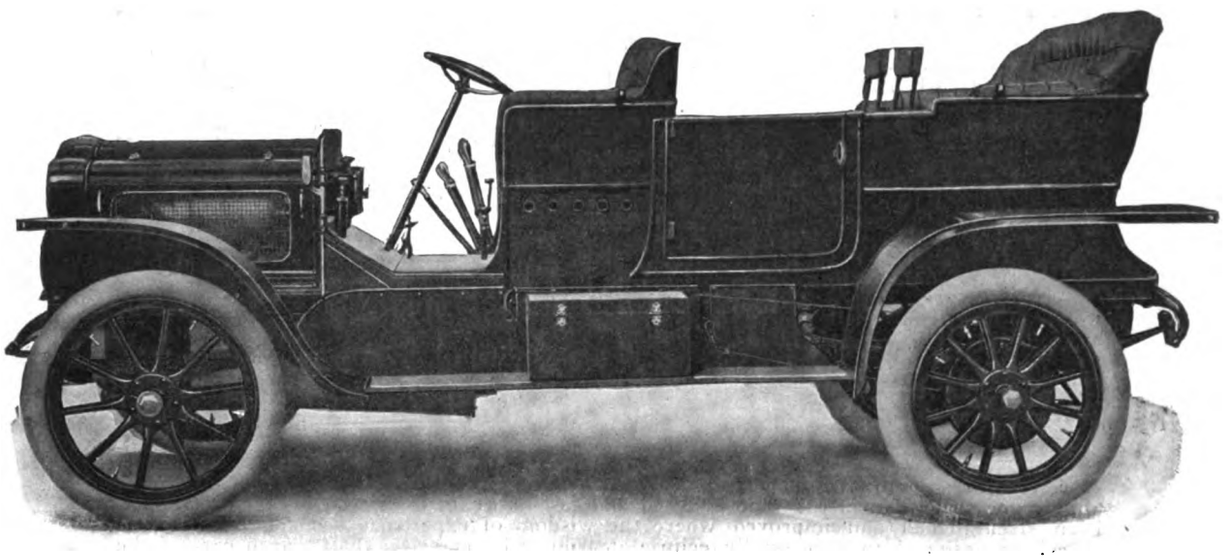
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Thomas 6-70 Special

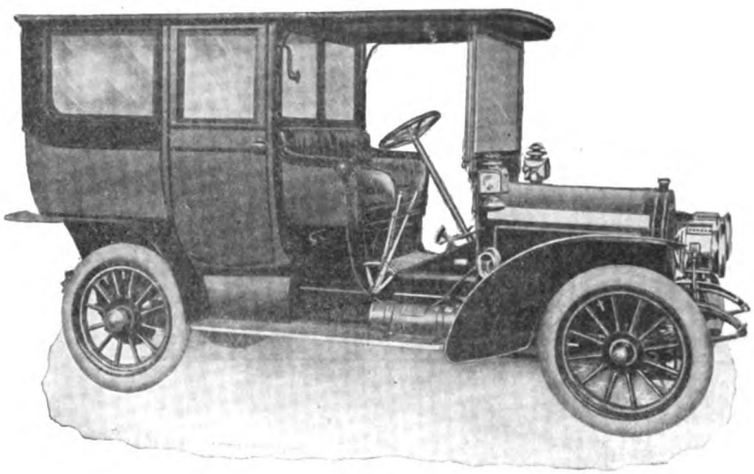
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Some would quarrel with the majority on one detail, some on another.

But a Garford car would be the net result.

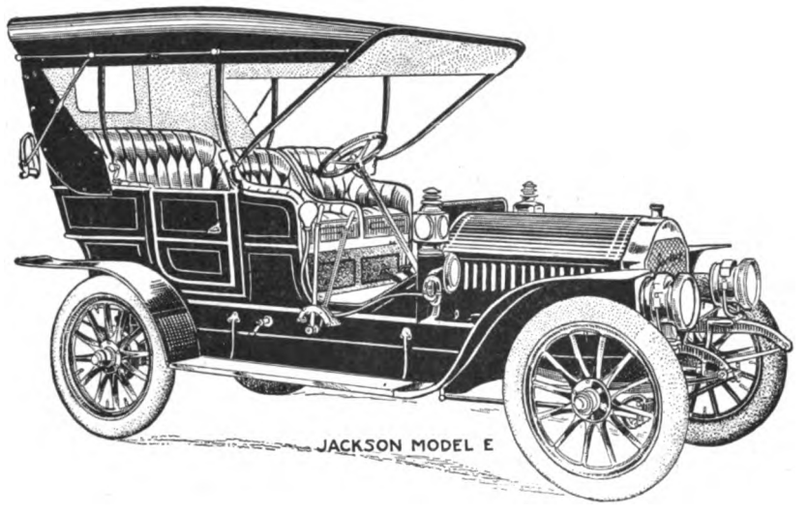
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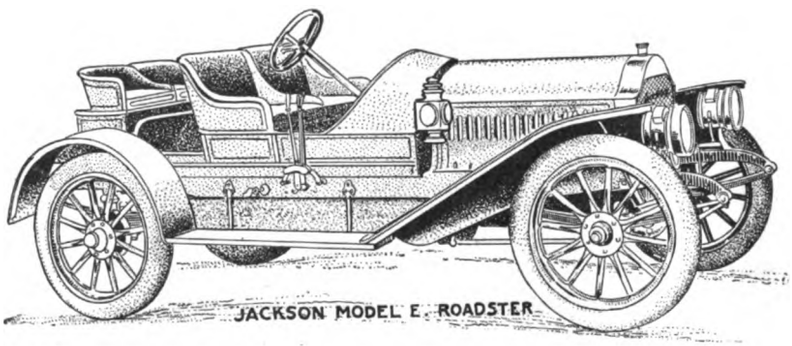
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Model C—2-cylinder opposed under body. Chain drive. 2-speed planetary transmission. 30-inch wheels. 3½-inch tires. 96-inch wheel base. 24 H. P. $1,250.



Model F—Runabout. 2-cylinder opposed, under hood. Shaft drive. 2 speed planetary transmission. 30-inch wheels. 3-inch tires. 90-inch wheel base. 18 H. P. $850.

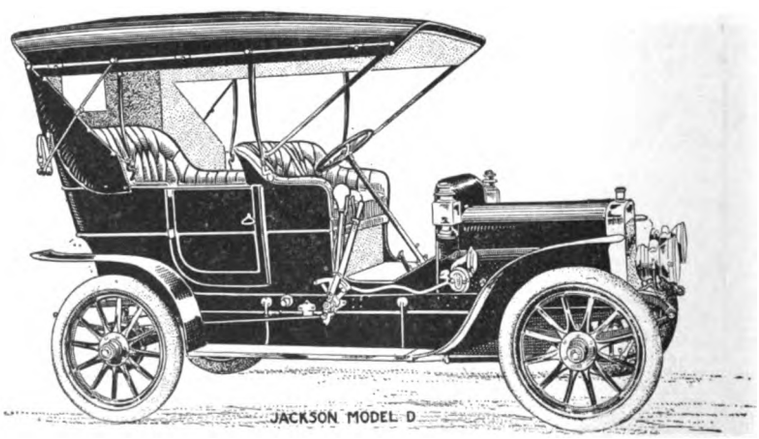
Model E—Gentlemen's Roadster. 3 or 4 Passenger. 35 H. P. 3 speed selective type transmission. 34-inch wheels. 3½-inch tires. Shaft drive. 111-inch wheel base. $2,000.

Exhibited at First Regiment Armory, Chicago, Nov. 30-Dec. 7. If you cannot see us there, write for catalogue.

JACKSON
AUTOMOBILE
COMPANY

JACKSON, MICHIGAN

Members A. M. C. M. A.



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"Keep Your Eye On Continentals!"

Continental TIRES

Always In The Lead!

In the Lead in Sales.
In the Lead in Quality.
In the Lead in New Ideas.

In Sales:—There are more Continentals sold than any other tire. Those who buy now have had ample opportunity to make comparisons. Ordering Continentals now, after the testing years have passed, is a matter of deliberate choice. So we may be excused for taking all the more pride in the flattering record for Continentals this year.

In Quality:—The test of use tells whether a tire gives the service or not. Continentals have been aptly characterized as "the-low-cost-per-mile-tires."

In New Ideas:—When has there ever been such a radical advance in the tire industry as the Ready-Flated Tire, with demountable rim, shown exclusively by us this year. This is a spare tire carried "already inflated" adapted for instant use on the road. The entire change can be made in a minute or so, and a child can do it. All you have to do is to slip off one rim, fasten on another, and go ahead.

Send for booklet telling all about it.

Continental Caoutchouc Company

JOE M. GILBERT, General Manager

43 Warren Street, New York

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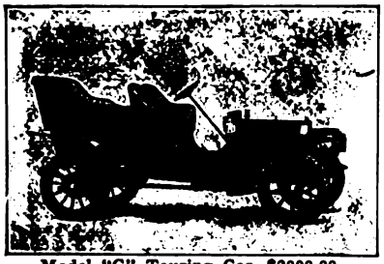
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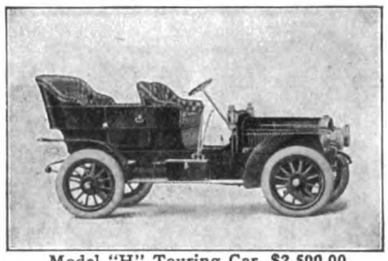
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Model "G" Touring Car, $2000.00
25 H. P. Four Cylinder



Model "H" Touring Car, $2,500.00
30 H. P. Four Cylinder



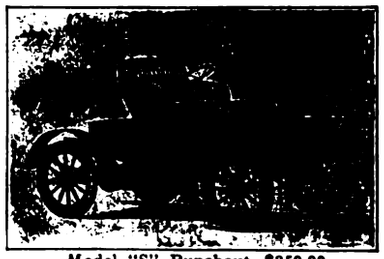
Model "T," $1,000.00
10 H. P. Single Cylinder



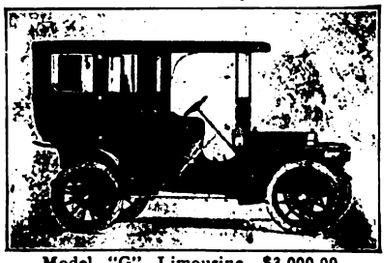
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Cadillac

The name that represents the really practical achievements in motor car construction.



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Model "H" Limousine, $3,600.00



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The Anti-Fatigue Car

AMERICAN LOCOMOTIVE LICENSE BERLIET MOTOR CAR

It never grows weary of well doing. All are beginning now to realize what the users of it and its builders always have known—that the

American Locomotive Motor Car

is the "greatest touring car in the world, bar none." Tourists boast that with this machine they can always keep their schedule and those who have driven it farthest, say:

"IT STAYS NEW"

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Vanadium, "the anti-fatigue metal," is in ALL its steel and iron.
What lasts best. *is* best.

The energies and backing of a $50,000,000 company are behind it.

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"Firestone"

Popularity is Growing as Experimenting is Being Eliminated from Automobile Manufacture

THE CHICAGO SHOW RECORD FOR EXAMPLE

Fifty-nine cars equipped with Firestone Solid tires.

Twenty-three equipped with all competing makes combined.

An unparalleled endorsement in rubber tire history

In the Show for 1907 it was Thirteen cars with Firestone Solids, Eleven with all others combined.

In 1906 it was Thirty-two cars with Firestone Solids, Twenty-two with all others combined.

In 1905 it was Twenty-two cars with Firestone Solids, Eight with all others combined.

Firestone Pneumatics with the same backing are growing no less rapidly in Popularity.

FIRESTONE TIRE & RUBBER COMPANY

AKRON, OHIO

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THE MARMON

"A Mechanical Masterpiece"

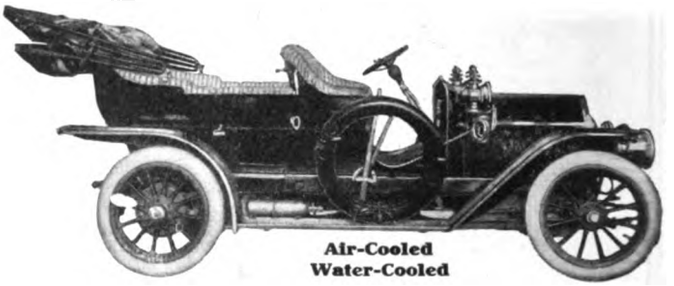
The Easiest Riding Car in the World

A motion gentle as a cradle, enabling a woman to tour any distance without injury or exhaustion—

A sane, sturdy construction of unrivalled accuracy and excellence of material—

A touring ability, as reliable as that of a railroad train, to which a score of exclusive patented features contribute—

These things urge a careful buyer to investigate the Marmon Car, and to test it in operation, before purchasing any automobile.



Air-Cooled
Water-Cooled

Model H Touring Car, 40-45 H. P., $3500
Model H Roadster, 40-45 H. P., - $3500
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Desirable Territory for Dealers. Note List Above

Elmore Valveless 2-Cycle

120 Elmore Cars kept in repair by one man

1908

Elmore Thirty, $1750

F. O. B. Factory

The full force of this fact—that 120 Elmore cars in New York are kept in repair by one man—will not come home to you till you have considered what it really means.

Just imagine, one man for instance, trying to take care of half that many cars of the four cycle type—with their hundreds of trouble-giving valves, cams, rollers, springs, lifts and other mechanical complications.

Yet it is being done in New York with the Elmore—because it is the Elmore, because the Elmore is elementally simple, because it has no valves, rollers, lifts, springs, or cams at all, and because it is the most perfect type extant of two-cycle construction.

Elmore Forty, $2500

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If you wish verification of this astonishing and significant fact you can get it through inquiry addressed to A. E. Ranney & Co., New York agents of the Elmore company.

You will find further verification of the fact that Elmore repairs are practically nil and non-existant in every city in the country in which Elmore cars are operated—from every man, in fact, who owns an Elmore car.

From this same man—if he owns a 1908 Elmore car—you will also find verification of the fact that the Elmore ignition system with the installation of the Atwater-Kent spark generator is positively the most wonderful and economical ignition system in existence—a system that will run a car 2,000 miles on one set of six ordinary six-inch dry cells and drain those cells to so low a point that cells discarded by others as useless will operate the Elmore car for miles.

Write for the Elmore literature—but see an Elmore agent.

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GUARANTEED FOR 5,000 MILES RIDING

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Could any manufacturer afford to give such a guarantee if he was not prepared to stand squarely behind it?

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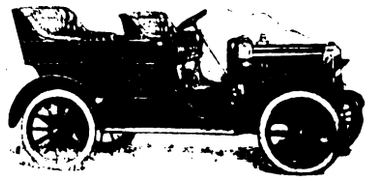
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Minneapolis, Nicollet St.
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24 H. P.—$1.750.

You do business in a business-like way—You want a car that does business—not a car that looks business and fails at the first emergency. You want a

"Maxwell"

The "Maxwell" is an every day car for every day use.

It is the ideal car for the average citizen, to whom we look to build the motoring industry.

The "Maxwell" is not a freak—it is not a racer. It is a pleasure car of known efficiency, which may be depended upon to surmount the most trying road and weather conditions.

No cars at any price can show a more consistent record of performance than the 14 H. P. Tourabout at $825, and 20 H. P. Touring Car at $1,450—and the new 4-cylinder 24 H. P. Touring Car which is an exact duplicate, mechanically, of the famous Glidden Tour Pilot, maintains the "Maxwell" standard in every respect.

To the genius of Mr. J. D. Maxwell, whose name heads the list of motor car designers, the success of the "Maxwell" line is largely due.

Get a "Maxwell Convincer" at your convenience. Address Dept. 2.

Benj. Briscoe *President.*

Maxwell-Briscoe Motor Co.

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THE CAR BUILT FOR PERMANENCE

You're Sure of Your Trip

When you start in an American Mors you're sure of reaching the destined point without trouble or delay.

No matter what hills, what the condition of the road or other ordinary and even extraordinary automobile obstacles, the American Mors will get you there.

Every part of the American Mors is built to do a specific share of the work—and it does it.

No one part shifts the work on another.

They all work together harmoniously and make "the perfectly balanced car."

AMERICAN MORS TOURING CARS—THREE TYPES:

14-18 H. P., $3,000 24-32 H. P., $5,000 40-52 H. P., $6,000

All bodies of the most Perfect Designs—Complete Equipment

GUARANTEED FOR ONE YEAR

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Licensed by the Société Anonyme d'Electricité et d'Automobiles, "MORS," Paris, France

Built by the Largest Builders of Street Cars in the World

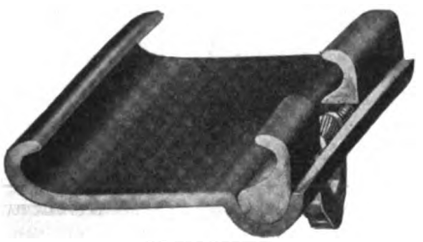
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MORGAN & WRIGHT TIRES

have made big gains in the tire field during the past season, due wholly to the fact that they have stood up in a way that commanded the attention of manufacturers, dealers and users.

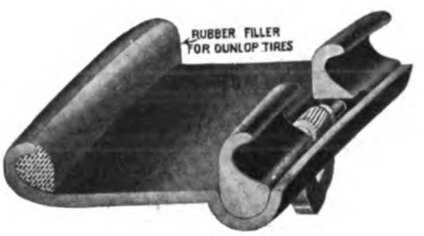
It is already clear that 1908 will be a banner year for good tires.

There is no method of making friends equal to the method of making good.



CLINCHER

The Improved Midgley Rim, illustrated above, accommodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.



DUNLOP

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1908 *Locomobile*

Combines Proved Reliability With Increased Efficiency and Low Cost of Up-Keep

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CLARENCE H. MACKAY, PRESIDENT.

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Send the following message, without repeating, subject to the terms and conditions printed on the back hereof, which are hereby agreed to.

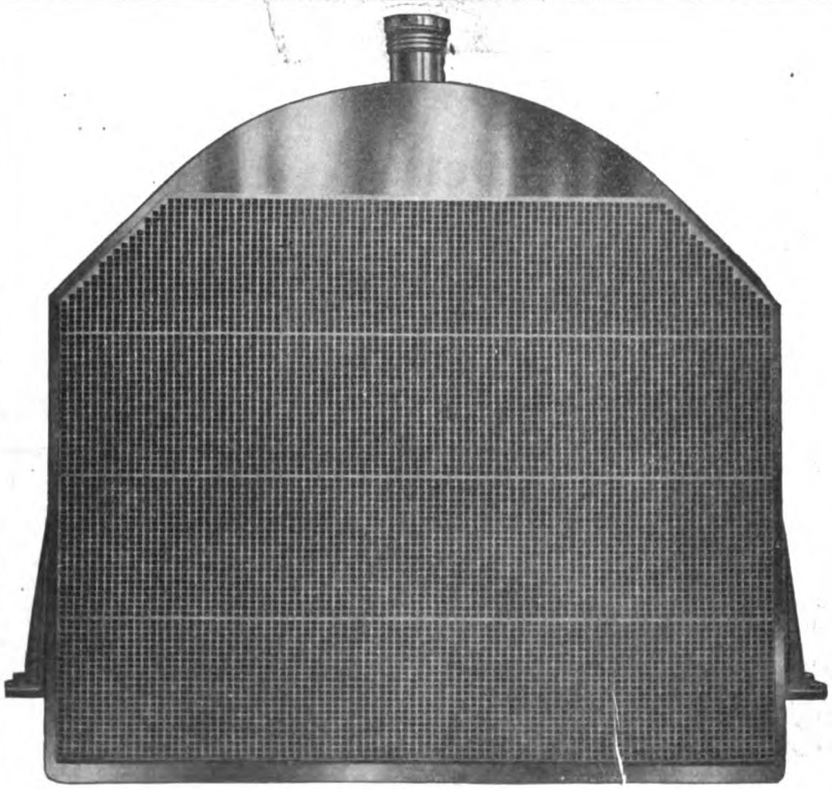
28CP Gm Chicago, Ill. Nov. 28, 07.

Studebaker Automobile Company,

South Bend, Ind.

Studebaker thirty model H went through Chicago Motor Club three day six hundred mile reliability run in great shape made every control on time didn't require single adjustment from start to finish engine worked beautifully never missed a shot.

E. Q. Cordner



¶ It's not what we say, but what Mayo Radiators have done, that has led to their adoption by America's best cars.

¶ "What's worth doing at all is worth doing well," is the policy on which Mayo Radiators were built and will continue to be built.

¶ Largely increased facilities enable us to take on a few new customers of the kind that place quality before price.

¶ **The Mayo Radiator** is **The Quality Radiator.**

¶ If you are a **Quality Maker** better write us at once.

HONEYCOMB, CELLULAR OR FLAT TUBE TYPES.

MAYO RADIATOR COMPANY, New Haven, Conn.

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Manufactured in a factory devoted exclusively to the production of pneumatic tires.

Manufactured by the Pioneer builders of Clincher Automobile Tires in America.

Years of study and experience are necessary to produce a tire that will prove satisfactory under all conditions. Our plant is devoted exclusively to the manufacture of pneumatic tires, and as pioneers in that line we have had the necessary experience, and the results of our close study in one line exclusively are shown in our 1908 tires.

Spaces 38 and 39 Coliseum, Chicago Auto Show.

G&J Tire Co.

INDIANAPOLIS, IND.

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Matheson

Every Matheson car turned out in the last ten years is still running and is reported to be in good condition. Most of the Mathesons turned out within the last three years have never had a single replacement and are still giving perfect service to their original purchasers. Many 1906 Mathesons have to date, been not only free from repairs but from even adjustments. We have many letters from owners of 1907 Mathesons who have given their cars hard and constant use for the last seven months without spending five cents for repairs.

The salient Matheson features are those of the greatest foreign cars. The Matheson differs from these in one important respect—it's better. The great string of Matheson victories during the past season, its new speed records, hill climbing records, endurance records, its perfect scores galore in reliability contests, made not only without need of repairs, but without even adjustments, all these have repeatedly proven to us that there is no room for improvement in the Matheson. We have sought in vain for records of performance that would direct the improvement of a single feature. Feature for feature through the world's output of high powered cars, not excepting the best of the foreign makes, there is nothing that can compare with the Matheson for performance over American roads.

Write for our new booklet, "I Drove my Matheson—" by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. The Matheson sets a standard by which you may judge other high powered cars.

Licensed under Selden Patent **Touring Cars, 50 H. P., $5500** Guaranteed One Year

Palmer & Singer Mfg. Company

1619 Broadway (Formerly Matheson Co. of New York.) Factory at Wilkes Barre, Pa. **New York**

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The Purchase of An Automobile

has become a purely business transaction in which the returns in satisfactory service, reliability and economy of maintenance are balanced against the investment.

From the standpoints of economical maintenance, absolute reliability and minimum depreciation in market value, the

Rambler

stands preeminently the gilt-edge investment of the industry, a position won and held through years of satisfactory service.

The 1908 models mark the nearest approach to mechanical perfection ever attained.

Our advance catalog, now ready, will show you how and why and a demonstration will convince. Both are at you service. Write today or see the nearest Rambler representative.

Thomas B. Jeffery & Company

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, December 5, 1907. No. 10

DAIMLER IN WAITING ATTITUDE

Unable Under Existing Financial Conditions to Restore the Burned Plant—Facts Brought Out by Suit.

Ever since the fire which, several months ago, destroyed its plant in Long Island City, N. Y., the Daimler Mfg. Co., makers of the American Mercedes, has been at a standstill and that once well known car has ceased to be a factor in the industry.

Late last week point was given to the existing state of affairs by the seizure of six automobiles, said to belong to the Daimler company, at the instance of Mrs. Dora Stadley, who recently was awarded judgment for $8,500 for the loss of her husband, who was killed by a car belonging to the Daimler people. The sale of the seized property was advertised, but at the eleventh hour it was avoided by reason of an amicable understanding reached with Mrs. Stadler.

Inquiry at the remains of the Daimler factory brought out the fact that there is nothing doing there at present. It was stated that immediately after the fire efforts were made to obtain the capital necessary to restore the plant and these efforts were still in progress when the recent financial upheaval occurred and checked them. The Motor World's informant stated that the company is merely "sitting tight" and taking care of its former customers' cars. It is doing no construction work, but so soon as money becomes easier efforts will be made to rebuild.

Ford Asks Receivership for a Bank.

Suit has been filed by the Ford Motor Co. asking judgment for $10,000 and the appointment of a receiver for the Richcreek Bank, of Indianapolis, Ind. According to the allegations of the complaint the Ford Motor Co. turned over to the bank for collection at three different times drafts and bills of lading against the Fisher Automobile Co., of Indianapolis, for shipments to be made to that company. The first shipment, it is alleged, was received Sept. 2, the second Sept. 17, and the third Oct. 14, and in each instance the drafts were paid by the Fisher Automobile Co., the total amount of the three drafts reaching $10,000, which is the judgment asked by the Ford company. It is declared in the complaint that these drafts were receipted to the Fisher Automobile Co. by the bank, and the funds converted to the use of the bank.

Johnson Resigns Continental Offices.

C. S. Johnston has resigned as the treasurer and general manager of the Continental Auto Mfg. Co., of New Haven, Conn., having sold to the company a good part of his holdings. As designer and builder of the Continental cars he was prominently identified with the concern from the start, and in the last two seasons had brought the car into some prominence. A conflict with other interests in the company as to policy resulted in the reorganization which has just been effected, and H. L. Moeller has been chosen treasurer. While not committed to remaining in the automobile business, Johnston has bought two cars from the Continental Co. and will for the present engage in a tour from Boston to Florida, placing agencies where the company is not yet represented.

Berkshire in Hands of Receiver.

At the instance of the company itself and in order to protect the creditors, F. T. Francis has been appointed temporary receiver of the Berkshire Motor Car Co., Pittsfield, Mass. The liabilities are placed at $35,000 and the assets at $30,000. The company shut down two or three months since and announced that it would not resume unless local capital was forthcoming.

Shoemaker Assets Total $31,022.

According to the appraisement of the receiver, the assets of the Shoemaker Automobile Co., Elkhart, Ind., total $31,022.04; the liabilities have not been made public.

NEW MEN CONTROL THE DRAGON

Reorganization of the Company Under New Name—Planning an Ambitious but Conservative Campaign.

New blood and new capital which have been infused into the Dragon Automobile Co., of Philadelphia, have carried with it a reorganization and a change of name. It is now the Dragon Motor Co., capitalized at $1,000,000. In the reorganization John C. Calhoun, a New York capitalist, succeeds John Kane Mills as president, although Mills remains a shareholder in the concern. A. L. Kull, who has had the sales management, will continue to direct it, and under the new order of things also becomes vice-president of the company.

In addition to Calhoun, two other new men now figure in Dragon affairs. These are R. G. Kelsey and C. A. Pickard, who have purchased interests. Kelsey is the well known amateur driver of Brooklyn, who has driven various makes of cars and whose performances in races and other contests have won him considerable fame. He will manage the factory and assumes the title and duties of secretary-treasurer. Having thus been strengthened, the company plans an ambitious but conservative campaign for the future, in which the development of taxicabs will figure prominently.

Pratt to Manage Buick Sales.

J. Elmer Pratt, who recently resigned from the sales department of the Cadillac Motor Car Co., Detroit, did not long remain out of business. He has engaged as director of the selling division of the Buick Motor Co., Jackson, Mich.

Coppock Leaves Marion for Decatur.

The Coppock Motor Car Co. has removed from Marion, Ind., to Decatur, in the same State. The move is expected to considerably advance the manufacture of the Coppock commercial vehicles.

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THE WEEK'S INCORPORATIONS.

Camden, N. J.—Empire Engine Co., under New Jersey laws, with $50,000 capital. Corporators—Anthony Tucker, Andrew E. West, and George W. Hite.

Springfield. Ill.—American Automobile Supply Co., under Illinois laws, with $50,000 capital. Corporators—F. M. Roosa, W. R. Reid, E. D. Roosa, Springfield, Ill.

Chicago, Ill.—Taximeter Motor Cab Co., under Illinois laws, with $50,000 capital; to operate motor cabs. Corporators—C. H. Foster, B. Lichtenberger, W. M. Fisher, Chicago, Ill.

Camden, N. J.—Philadelphia Taxicab Co., The, under New Jersey laws, with $200,000 capital; to trade and deal in automobiles. Corporators—Lowder T. Layton, J. T. Hickman, and G. H. B. Martin.

New York City, N. Y.—York Auto Renting Co., under New York laws, with $1,000 capital. Corporators—Richard Adler, 74 West 85th street., Charles Barrett, 18 Morningside avenue, Jack Kendrick, 60 West 43d street, New York City.

New York City, N. Y.—Interboro Motor Dispatch Co., under New York laws, with $500 capital. Corporators—Frederick Ruther, Hicksville, N. Y.; Frederick A. Tuttle, 198 Lexington avenue, Brooklyn, N. Y.; A. R. Kelly, New York City, directors.

Corning, N. Y.—Corning Motor and Engine Co., under New York laws, with $50,000 capital. Corporators—Charles C. Clark, 290 Wtauga avenue; Merrill S. Baker, 267 Baker street, Corning, N. Y.; Laverne J. Johnson, 344 Fairmount avenue, Jamestown, N. Y.

New York City, N. Y.—National Autocab Co., under New York laws, with $25,000 capital, to manufacture self-propelled vehicles, motors, engines, carriages and wagons. Corporators—W. B. Vause, Brooklyn, N. Y.; G. A. Knobloch, New York City, N. Y.; W. Mabry, Brooklyn, N. Y.

Parker Sues and Attaches Property.

At the instance of Lewis D. Parker, its one-time president, property of the Hartford Rubber Works Co., Hartford, Conn., to the amount of $150,000, has been attached in a suit for damage growing out of alleged breach of contract. It is a not unusual procedure in actions of the sort and is not of particular significance. Mr. Parker was ousted from the presidency several years ago despite a contract which he asserts existed and which it is stated only recently expired. It is on this contract that the suit for damage is based.

Muncie Under a Receivership.

The Muncie Auto Parts Co., Muncie, Ind., whose stand remained vacant at the Chicago Show, went into the hands of a receiver on Friday last, 29th ult., following a petition filed by Harvey Hooke, one of the stockholders. The company is claimed to be solvent, its embarrasment being laid to the financial stringency which nowadays is blamed for everything under the sun.

Hawkins to Direct Ford Sales.

After having been associated with the company for four years in the professional capacity of auditor and advisor. N. A. Hawkins has been appointed "commercial manager" of the Ford Motor Co., of Detroit. The new title is said to embrace much more than that of general sales manager in that its incumbent will have complete charge of all the Ford branches and the entire selling organization.

The magnitude of the Ford Co.'s affairs



N. A. HAWKINS

is such as to give Mr. Hawkins great scope for the genius and capacity for organization that he has shown in his professional work as head of one of the largest auditing companies in the West and which bears his name. These qualities he has demonstrated not only in his work for the Ford Co., but for other large manufacturing concerns among his clients. In turning over the detail control of eleven branches and some 700 agency arrangements to Mr. Hawkins, more time and opportunity for the large general questions will be given to Mr. James Couzens, who having built up this organization will now give it only a general supervision, "just touching the high spots," as it is announced. Relieved of the detail burden, Mr. Couzens will bring his work to bear on the extensive campaign for foreign business the world over and the increase of the branch system both at home and abroad.

The appointment of Mr. Hawkins is one which promises to be popular among Ford branch managers and agents everywhere, as he is no stranger to their problems and through his previous work for the company is wholly in the spirit of Ford policies and ambitions. It is said that while heretofore he has not been directly and completely identified with the automobile industry, there are few men better posted in every detail of the business than he.

IN THE RETAIL WORLD.

Seattle will shortly have a branch of the Ford Motor Company located in that city. R. P. Rice, formerly of Chicago, will be in charge.

The Newby Automobile Co., New Castle, Ind., are having a garage erected on West Bond street, with capacity for fifty cars.

From church to garage is the change being made in the old First Christian church building in Omaha. The Bergers Automobile Company will occupy it when alterations are made.

The Allen-Swan Co., of Brooklyn, has been incorporated with $27,000 capital. L. H. Allen is president, and Halstead Swan is secretary and treasurer. The company has secured the exclusive Long Island agency for the Stearns car.

Page & Palmer, 1712 Michigan avenue, Chicago, have taken the agency for the Supplementary Spiral Spring Co., of St. Louis. In addition to handling the Windy City territory they will also cover the states of Michigan and Wisconsin.

Henry C. Lea will build a big garage at 229-239 North Broad street, Philadelphia, representing an investment of $400,000. The building will be three stories in height, 122 x120 feet. It will be in the French Renaisance style, a base of granite, the upper floors of light colored brick and terra cotta.

The new White garage in East Orange, now complete and open for business, contains in addition to the regular features a complete lathe and machine shop, and a paint and carpenter shop. Mr. Olcott, the manager, is an automobile engineer of several years' experience.

At the annual meeting of the Barndt-Johnson Auto Supply Co., Columbus, Ohio, the following officers and directors were elected: President, C. Chris Born; vice-president and general superintendent, W. R. Johnson; secretary and general manager, C. S. Barndt; directors, C. Chris Born, C. S. Barndt, W. R. Johnson, William Bauer and Frank L. Packard.

Smith Coming to Buy and to Sell.

G. H. Smith, of the United Motor Industries, Ltd., of London, will sail for this country on the 18th inst. He has some ignition specialties which he hopes to introduce and also will be open for any American motor novelties of merit. While here he will make Hotel Astor, New York, his headquarters.

Lindoefer Out of the Logan.

F. C. Lindoerfer, for some months with the sales department of the Logan Construction Co., of Chillicothe, O., has severed his connection with that concern. He is no longer associated with it in any way.

The Cincinnati dealers have selected February 24-29 as the dates for their 1908 show; it will be held in Music Hall.

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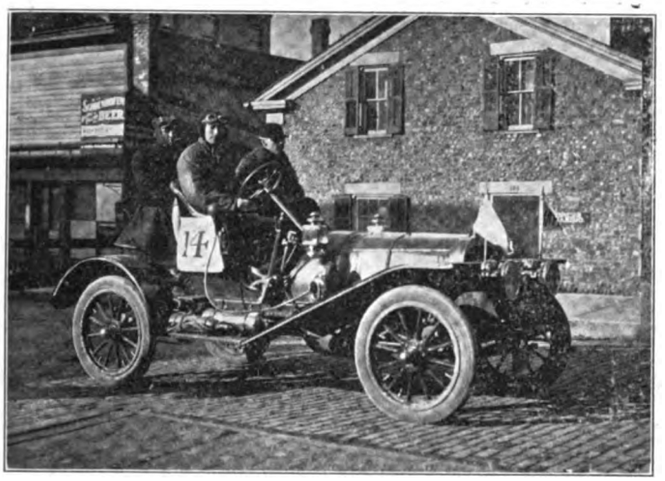
HAIR SPLITTING RELIABILITY RUN

Trivial Conditions that Reduced the Chicago Affair to an Absurdity—How Perfect Scores Were Eliminated.

They called it a "reliability run," but "elimination test" perhaps would be a better name for the contest conducted by the Chicago Motor Club, Tuesday, Wednesday and Thursday of last week, November 26, 27, and 28, and which was designed to stimulate interest in the show which opened on Saturday. As a matter of fact the "reliability" as judged by the standard which governed the affair was of the hair-splitting order. As a result there are nine dissatisfied survivors. Criticism is easy, of course, and the task of the judges, where a tie is at issue, is so difficult that it is not always fair to blame them for having recourse to exacting means, but in this instance the resource was to almost ridiculous trivialities of the most far-fetched kind and extraneous character.

When the run was completed ten cars were found to have lost no points. Then the judges got busy on their process of elimination and brought to bear critical discrimination, the like of which never has obtained in a previous contest. For instance, one of the perfect score cars lost because one of the hair-splitting judges put his hand on the brake drum and discovered it a trifle warm; another car was toppled off the perfect score rung because a bullseye in the lens of a lamp had fallen out; still another had its score soiled because it had been bumped by another car and showed a slightly dented fender as the result, while the Rambler was marked less perfect than others because a speedometer bracket had become loose. But probably the most remarkable evidence of this critical discrimination was apparent in the case of the White. This car was fitted with a canvas under apron, and after finding nothing against the car in any other respect one of the officials discovered that one of the lacings to this apron had been slightly chafed, which was thought to be sufficient evidence against its "reliability" to put a black mark against it.

After all this elimination by the trivialties mentioned it was announced that only Frank Nutt's Haynes had no vulnerable spots or marks against it, and he was declared the winner. The other nine who finished with perfect scores and were reduced by the supercritical judges were: Arthur Kumpf, Pierce Arrow; Ralph Owen, Oldsmobile; Ted Collier, Rambler; R. E. Parker, Auburn; William Leitch, White; W. Mitchell, Locomobile; William Smith, Studebaker; John Aiken, National, and Webb Jay, Kisselkar.



FRANK NUTT, HAYNES, WINNER OF RELIABILITY CONTEST



ARTHUR KUMPF, GREAT ARROW, WINNER OF SECOND PRIZE

Despite the early hour of 5 o'clock quite a large crowd gathered at Michigan avenue 26th, to see the start. Thirty-five cars, all of them sealed, left at one minute intervals. The Royal, with Cook at the wheel, was the first to follow in the wake of the official pilot cars at 5:01 a. m., but C. A. Coey was the first of the contestants to meet with mishap. With R. E. Eads as observer and Charles Gregory as passenger, Coey ran into a ditch, before he got out of the city limits. The accident put a crimp in Coey's expectations as the front axle of the Thomas was so bent that the driver had to return to the starting point.

The first day's run was to South Bend, Ind., and return, a distance of 227 miles, and of the 35 cars that set out bravely in the morning 23 returned at night with clean sheets. Mishaps were frequent, but none of them serious. Marion broke a shaft two miles from the place Coey came to grief, and Cook's Royal Tourist was the recipient of many black marks on account of a broken axle. The other cars penalized were Paul Hoffman, Pierce Arrow, 26 points; D. Buck, Matheson, 16 points; J. Mitchell, Maxwell, 334 points; Frank Grogan, Rapid 'bus, 75 points; J. Heidman, Matheson, 235 points; H. A. Pierce, Pierce Racine, 3 points, and Fred Lesier, Locomobile, 10 points. J. Barnes, Frayer-Miller; Harry Stutz, Marion, and C. A. Coey, Thomas, all withdrew.

Sixteen of the original thirty-five cars survived Wednesday's run to Rockford, Ill., and return, a distance of 190 miles. The Rockford run was uneventful compared with the first day. The Rambler confetti car furished the most excitement by running into a fence 15 miles out of town early in the morning, after which its work was taken up by the pacemaker. The roads were not nearly so good as on the first day.

The technical committee had a busy time after the finish of the day's trip and the work took in the unfinished scores of the first day. Twenty-five points were added to the 26 incurred by Paul Hoffman's Pierce Arrow, the demerits being for doing work equivalent to breaking a seal. The ten points incurred by Fred Leiser's Locomobile were increased to 35 for the same reason. The penalization of M. D. Candecar's Reo, not fixed Tuesday night, was set at 38 points, the fine being for strapping on one corner of the radiator which had become loose. William Smith's Studebaker lost 4 points because he wedged in a piece of wood in the cut-out on the muffler. Don Kilbroune, Silent Knight, lost his perfect score because he tightened the lamp brackets, and the Premier, 18 points, was another car that lost a clean score. There were four withdrawals: Bert Payne, Stoddard-Dayton; E. F. Scheffler, Jackson; J. Heinemann, Matheson, and D. Buck, Matheson.

The final day, Thursday, saw the field of possible perfect scorers reduced to ten. The run was to Ottawa, Ill., and return, a little less than 200 miles. R. Smith, Matheson, was compelled to break the seals on his car, and this act, together with work done, cost him 401 points. F. L. Holmes, Jackson, was caught for 50 points, half of them for breaking a seal. The Autocar was

(Continued on page 542)

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"Famous Appersou Jackrabbit"

The 75-mile-per-hour car

INVESTIGATE

Model M—$2750

35 H. P.—Double Ignition

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FRED S. SMITH,
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JOS. F. GUNTHER COMPANY,
1240 Michigan Ave., Chicago, Ill.
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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, Pres. R. G. Betts, Treas.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, DECEMBER 5, 1907

The New York-Paris Undertaking.

Viewing the New York to Paris automobile endurance contest purely in the light of a piece of journalistic enterprise, it is admirable. For arousing discussion and attracting the attention of the public not only to its promoters but to the automobile in a general way, it is a most brilliant conception. But considered as a test of individual merit on the part of competing cars or of the abilities and utility of automobiles as a whole, it is impossible.

Admittedly a much more difficult undertaking than the Pekin-Paris affair, it is bound to take on some of the features which made that exploit of little value when regarded critically as a demonstration of the automobile's ability to travel anywhere that may be represented as land on the maps. Of the 6,200 miles from Pekin to Paris many a mile was covered with the aid of oxen or horses, and on some parts of the journey a coolie carrier for every 100 pounds of weight was provided, and the latter's sweating labors bore testimony to the wisdom of such a provision. In the proposed New York to Paris journey of 15,000 miles the obstacles are immeasurably greater, and it would be impossible for the machines to go the whole distance without outside assistance, even excepting the matter of boat transportation across the Bering Strait.

Such a race or contest would be a contest indeed, but least of all for the cars themselves. It would be a battle of money, executive ability, human endurance, ingenuity, and resourcefulness, with a dash of luck to mix matters. The secret of winning would be in having the best drivers, the wisest guides as to the detail of the route, the most perfect arrangement of supply stations, and the most adequate provision for assistance in time of trouble. Thus the car accompanied through the hard portions of the trip by the biggest or most efficient army of sappers and miners, road builders, teamsters, dog drivers, topographers, mechanics, commissaries, blacksmiths, and supply and repair parts carriers, might be expected to have the best chance. The merits of the competing machines would be insignificant, granting that they averaged anywhere near the standard of performance demanded of even the most ordinary car in the more usual forms of service.

As a purely publicity stunt, the scheme has much to commend it to the trade and features that will commend it mightily to ambitious persons with an eye to the value of free advertising. Any one who is looking for that sort of thing should devise something unusual "for use in the Arctic regions" and get in early to avoid the rush.

It is quite possible, therefore, that the undertaking will be launched with an imposing entry list and a grand hurrah, and that ultimately some of the contestants may even reach Paris by the specified route, but it is not possible that it can be a significant test of the competing machines or a convincing evidence of the motor car's capacity for conquering all difficulties by land. To make the distance by the route suggested, the cars will have to be helped, a fact which will completely nullify the ostensible objects for which the whole affair is designed. If a man undertook to make the New York-Paris journey or any other journey afoot or ahorse and enroute was assisted by other means he would be disgraced. The automobilist who engages to do anything of the sort and employs other than the power of his own motor should be placed in the same category.

Whatever the value of the contest it is a theoretical publicity value and not a practical one, except as it may familiarize a number of people with a neglected geography.

The Extreme of Absurdities.

In the strenuous effort to prove themselves worth of their hire, press agents identified with the automobile industry have been responsible for certain evils that undesirably exist. One of the most reprehensible of the tricks practiced by some of them has been the oversmart effort to deceive editors and the public with items which make it appear that cars which they, the press agents, are paid to boost, won certain contests in which they competed when, as a matter of fact, they were merely near-winners or "also rans." These press agents have an adroit way of relating how a car "defeated 25 others of greater power," or something to the same effect, and failing utterly to say that it, in turn, was beaten by 2 or 22 others. It is sharp practice of the detestable sort and one which no reputable and self-respecting manufacturer should countenance.

But if there are many more reliability runs of the kind conducted last week in Chicago such press agent practices must become perfectly legitimate. We have full sympathy for the difficult and usually thankless tasks performed by the officials of such contests, but when they measure the reliability of a car in whatever degree by the lukewarmness of a brake, the looseness of a speedometer bracket, the loss of a lens in a tail lamp or the chafing of a lacing, they cease to be subjects for either sympathy or admiration. To proclaim broadcast that a car is less reliable or entitled to less credit because of such extraneous and ridiculous trivialities is the extreme of absurdities and is calculated to make the world indulge in a horse laugh. When hair splitting of that order prevails, the human senses are not capable of doing equal and exact justice to all. Any man, manufacturer or otherwise, who knowingly would submit his product or reputation, or any part of it to such microscopic judgment would be an ass of high degree. Those who suffered because of it cannot be blamed if their press agents become extremely busy in the effort to expose the absurdity of the Chicago undertaking and in claiming their just due.

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EXPORTS CONTINUE TO INCREASE

October Figures Show a Big Gain—United Kingdom and France the Largest Customers—Mexico Falls Off.

In October 201 American automobiles were exported to other countries, their value being $276,198, which with parts to the value of $41,870, made a total of $318,068. During the month of October a year ago the total of exports was $247,094, so that the gain for October alone is $70,974. This is in happy accordance with the steady advance that has been shown by the preceeding months, which is evidenced by the figures for the ten months ending October. In that period there have been shipped 2,622 complete machines, valued at $4,718,676, which, with parts exported, make a total of $5,281,953 as against $3,891,273 for the same period last year, or a net increase for ten months of $1,390,680.

The United Kingdom continues to be the largest customer for American motor cars, its October purchases amounting to $118,470 as against $43,633 last year and its tital for the ten months reaching the respectable figure of $1,622,261 as compared with $1,065,541 for the corresponding period in 1906. France, like the United Kingdom, shows increased purchases for both the month and the ten months, the French appreciation of American automobiles reaching $29,199 for October and exceeding a half million dollars for the past ten months. British Australia and the Asiatic countries more than doubled their takings during the month and swelled their total increases to considerable proportions. Mexico, while the second largest purchaser of the month, shows a decided falling off, the figures for October being $44,772 as against $67,389 in October a year ago. The total of Mexican shipments for the ten months likewise shows a decrease. British North America also drops for October but the ten months' total gives a substantial gain. This is similarly the case with Germany, Italy, Other Europe and the British East Indies.

The record in detail is as follows:

	October		Ten months ending October		
	1906	1907	1905	1906	1907
Exported to—					
United kingdom	$43,633	$118,470	$604,782	$1,065,541	$1,622,261
France	15,475	29,199	254,030	286,794	561,582
Germany	12,423	5,776	101,998	124,190	164,050
Italy	184	154	154,325	239,928	242,345
Other Europe	17,782	6,613	223,817	196,471	267,674
British North America	48,600	38,438	501,765	815,031	1,124,979
Mexico	67,389	44,772	150,042	613,453	557,454
West Indies and Bermuda	4,665	13,693	124,552	207,834	236,004
South America	18,923	23,865	47,938	122,382	208,919
British East Indies	655	239	28,602	26,922	28,950
British Australasia	5,563	16,386	85,548	106,476	170,882
Other Asia and Oceania	6,611	17,651	60,591	63,800	77,514
Africa	4,847	450	28,737	15,519	7,939
Other countries	344	2,362	2,894	6,932	11,400
Total automobiles and parts of	$247,094	$318,068	$2,369,621	$3,891,273	$5.281,953

Taxicabs Swell Total of Imports.

Statistics for the month of November are of the sort that will give renewed hope to such of the importers as desire to "fool their fancies." The month's totals show a large increase, but the increase is due not to sales of pleasure cars, but to taxicabs. During the month 145 automobiles of the total appraised value of $428,435.64, were brought over, in comparison with 98 cars, valued at $372,752.50 in November, 1906, and 75 cars valued at $291,913.31 in the same month of 1905. Thirteen hundred and thirty-eight cars, valued at $4,492,685, have been entered at the port of New York during the eleven months ending with November, compared with 1,420, valued at $4,978,067.71, and 986, valued at $3,759,317.91 for the same period of 1906 and 1905.

Autolyte Increases Its Scope.

The Tutolyte Mfg. Co., New York, of which the well known A. H. Funke is manager, has taken over the automobile supply department of Sibley & Pitman, who do business at 26 Warren street, to which address the Autolyte company has removed. Mr. Pitman, of the firm, has become treasurer of the latter concern.

Estep to Become Advertising Manager.

E. Ralph Estep, who from an eerie in Chicago, has been handling the Packard publicity during the past year, will come down to earth in Detroit on January 1st. On that date he will be established in the Packard factory as advertising manager and will devote himself wholly to that task.

Two Meetings, but Little Done.

The executive committee of the National Association of Automobile Manufacturers, and the board of management of the American Motor Car Manufacturers Association both held meetings in Chicago yesterday. Only routine affairs were, however, dealt with.

Compressed Air Engine in Operation.

George T. Garside, Reading, Pa., who is described as a nephew of Charles E. Duryea, has invented a compressed air engine. Attached to a buggy, it is said to be doing actual duty on the streets of Reading.

PIONEERSHIP IN THE INDUSTRY

Claimants for the Honor Set Forth Their Claims—An Interesting Chapter of Automobile History.

Infant industry that the manufacture of automobiles in the United States is, there is nevertheless a growing rivalry for veteranship honors among the manufacturers and designers, and those who have been engaged in it for some years are not averse to letting their early participation be known. At the Chicago show there was considerable discussion as to the pioneer distinction and in the thick of the battle there was issued a statement which proved an interesting contribution to the history of the automobile movement and of men who were among the first in the field.

Epitomized, the statement says that in 1893 Elwood Haynes, then manager of a gas plant in Kokomo, having seen a Sturgis electric at the Chicago World's Fair, put up money for Elmer and Edgar Apperson to build a gasolene motor car, the first one being completed at the Riverside Machine Works in Kokomo early in 1894. John D. Maxwell, now of Maxwell-Briscoe fame, was one of the working force, along with the Apperson brothers and three other mechanics. The first machine accomodated two passengers and had a single cylinder, two-cycle, vertical motor, developing one horsepower. In 1895, the statement continues, the Apperson brothers brought out the first two cylinder opposed motor ever built, and, on the same authority, Charles E. Duryea publicly brought out his first motor car in 1895 and Alexander Winton in 1896.

In 1895 Haynes and Elwood Apperson formed a co-partnership, each paying half the expense for building experimental horseless carriages, the work being done by the Apperson brothers. The Chicago Times-Herald Thanksgiving Day race that year had as competitors a Haynes-Apperson, a Duryea, an imported Benz, and a car made by E. J. Pennington. The Haynes-Apperson Automobile Co. was formed by Haynes and Elmer Apperson in 1898, each taking a quarter of the stock while outsiders took the remaining half. This resulted in the building of the first exclusive automobile plant in America.

The arrangement continued until 1901 when the Apperson brothers withdrew, returning to the Riverside Machine Works, where the first car was built, to manufacture "Apperson" cars for themselves. The Haynes-Apperson Co. was re-named the Haynes Automobile Co., and its product the "Haynes." In 1903 the Apperson brothers "plunged" on four cylinder cars exclusively, a policy from which they had no reason to deviate except this year, when a six cylinder was added to the line.

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Chicago, Beautiful and Biggest of the Big Shows

Chicago, December 3, 1907.

"As far as decorations are concerned, this show has the New York show completely buffaloed."

This was the proud and breezy verdict delivered to a man of and from the East before he had been within the confines of Chicago very much more than sixty minutes. The verdict was rendered in the language quoted, and of course by a man of the West; and for the benefit of those not versed in the vernacular, it may be well to explain that to be "buffaloed" is to be "outclassed," "licked to a finish," "beaten to a pulp," etc.

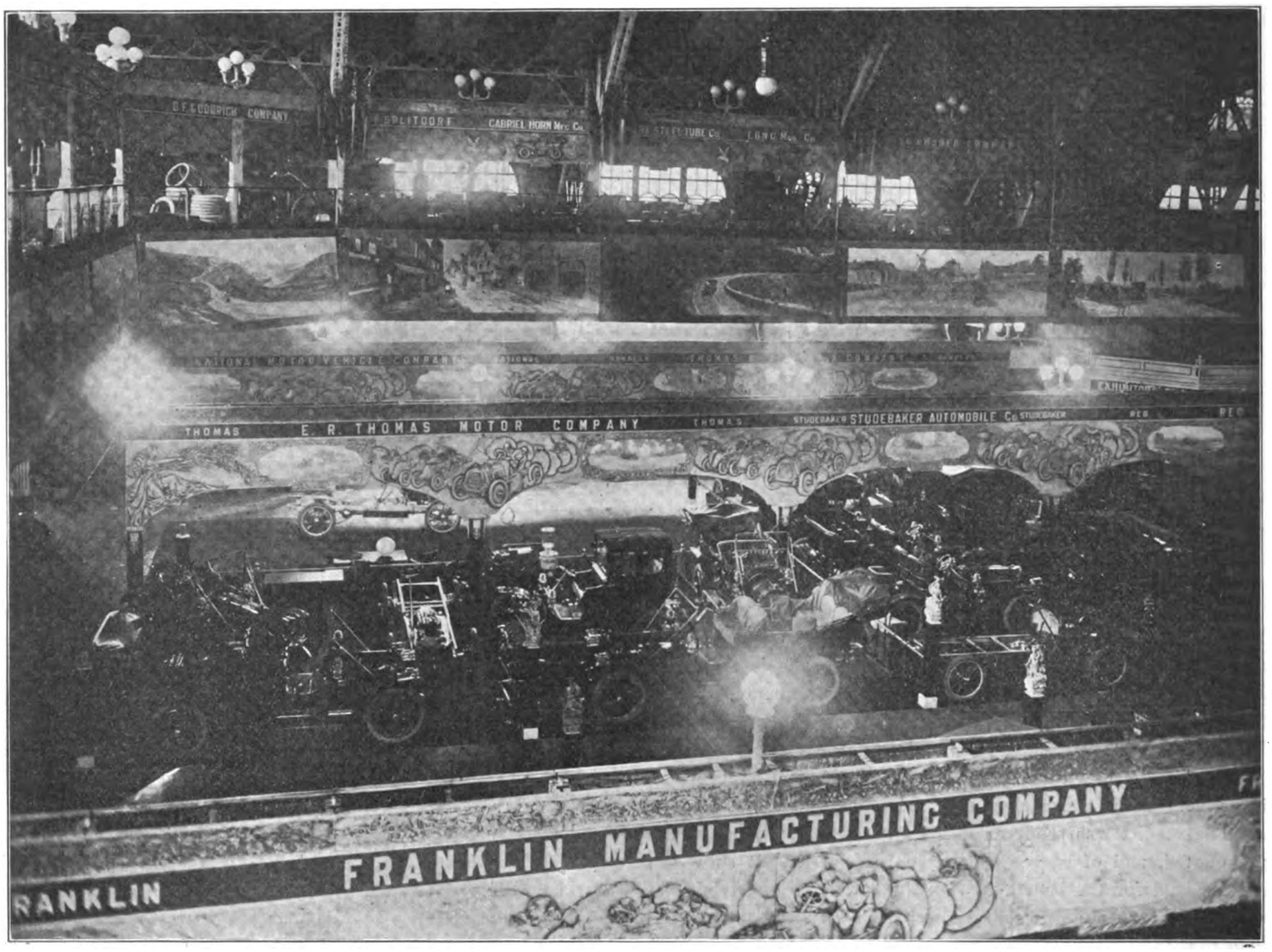
There will be no dispute that the Chicago Show, which, preceded by usual snowstorm, was opened at 2 o'clock, Saturday afternoon, is a very handsome and impressive exhibition. It is by far the largest ever held in this country and whether or not it is the most beautiful one is of small moment. It is a credit to the industry and to the promoters—nominally, the National Association of Automobile Manufacturers; specifically, Samuel A. Miles.

Without intending disparagement, a visitor likened the show to a three-ring circus, and for the purpose of conveying an idea the simile is not inapt. The exhibits are housed in three separate buildings, the Coliseum, the First Regiment armory, and the Seventh Regiment armory, more often styled Tattersalls, since it serves as a horse market. The First Regiment armory adjoins the rear of the Coliseum, from which it is separated by an alley, but the main entrance being "around the corner" it is necessary to walk the better part of a block to go from one building to the other. Tattersalls is three blocks distant, and on an unfrequented, uninviting street. It was there that the commercial vehicles and three of the pleasure cars were staged, but despite the fact that one admission fee permitted entrance to the three rings, but an insignificant proportion of those who have attended the show have made the journey to the commercial display. When there are fifty visitors in the place at one time, it is reckoned as a crush. It was not expected that the wagons and big trucks would hold interest for the populace, and the consequent abundance of elbow room has caused dismay to none save, possibly, the makers of the three pleasure cars who could not find space in the main ring. The display is distinctly creditable, and as the first of its sort, it appears to mark the real beginning of the long promised new era. It is an attraction for hard headed, earnest manufacturers and other business men.

A fire which threatened to wipe out the exhibit of commercial vehicles in Tattersalls, broke out a few minutes after 11 o'clock this (Tuesday) morning, looked dangerous for a while. It was caused by an overheated stove pipe in the gallery which set fire to the woodwork and in turn to the bunting that concealed the roof. Great bunches of the burning cloth fell on exhibits and exhibitors and carpeting and when they were not brushing the burning bunting off their cars or persons, or stamping out the fire in the carpet, the exhibitors were making strenuous efforts to push their heavy vehicles to the main entrance only to discover that it was too narrow to permit of their being removed; they had been entered through the big side door and it was that portion of the building that was threatened by the flames. When the fire department arrived, however, it made short work of the conflagration, but not until it had burned a big hole in the roof and denuded it of bunting. But one vehicle, a Worth, was damaged, and it was chiefly its canopy that suffered. A Motor World man who chanced to be in the building during the progress of the fire, found later that but one exhibitor had insurance that covered the case. Repairs were quickly effected and the show was "doing business" again in the evening. Few of the exhibitors in the other two show buildings knew anything of the conflagration in Tattersalls until long after it was over; nor are many of those in the Coliseum itself yet aware that about an hour later a little blaze in that building was nipped in the bud. Crossed electric wiring under the White booth was the cause of it, but after a part of the flooring had been chopped through the fire was quietly snuffed out.

In the Coliseum proper, the glass roof and most of the big iron girders are hidden by alternate loopings of green and yellow buntings, relieved by pendant flags of all nations. It is not a color scheme that brings joy to the camera men or that assisted in the making of strikingly clear photographs. When he realized the fact, Ralph

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A VIEW FROM THE COLISEUM GALLERY

Estep, the Packard publicity man, "got busy." He was stricken with a fearful lapse of memory. The Packard lavender and gold "honeymoon car" was in evidence, as was the "bride," and the presence of both suggested a picture. Estep, after posing the lady in the car near the "piece de resistance" of greenery and undressed statuary which hid the entrance to the cafe, summoned a small army of flash-light artists. He totally forgot all about the ban on their operations, and when they touched off their powder, there was a puff of smoke and a roar, that caused nerves to jump.

Estep got his picture and something more. The law was laid down in a fashion that effectually forbade further photography of the sort and Estep, his memory restored, apologized profoundly for his lapse. And at that, the laugh is on the publicity man. He overlooked the sign "Cafe," which pointed the way for those who hungered or thirsted, and as a result the photograph shows the "bride," as if emerging from the drink dispensary and with the "bridegroom" suggestively missing—a most unhoneymoonish proceeding.

Previous to the show much was made of the paintings by Maratta and the larger brushworkings by artists of unknown name and fame, both of which form features of the decorative plan of the main hall of the Coliseum, but as a matter of fact they are "buffaloed" by the great arches of papier mache finished to simulate marble, and by the statuettes of a goddess kneeling in a motor car, which latter surmount the red pedestals placed at the corners of each exhibit. A Maratta painting framed in light green forms the center of each arch; on one side of the picture is Fame, kneeling and naked to the waist, holding outstretched the palm of victory; on the other side of the picture is depicted in bas relief a striking scene of four cars racing abreast and with great clouds of dust reared behind them. It is a stirring piece of work and so well executed as to command admiration. The kneeling goddess is of the same character and is quite fit to adorn more than a public motor show. There is an archway for each exhibit—on the main floor. The exhibitors' names are spelled out in white and gold letters on a background of deep red. The carpeting is red and green. If he does not lift his eyes too high, the visitor may be tempted to agree with the Western enthusiast concerning the "buffaloing" of the New York show. Above the archways and forming the four sides of the "well" made by the gallery are the scenic artists' series of pictures of motoring scenes enclosed in cheap green framing. They are true to life so far as the motoring part of the pictures are concerned, but the man with the brush drew on every color in the rainbow, which fact, coupled with the green and yellow bunting up aloft and the more refined tones on the main floor, has caused a perfect riot of color that mars the general beauty and effectiveness. If instead of these pictures and the common and exposed chicken coop wire netting, which constitutes the guard for the gallery, there were but some filmy and subdued bunting, the whole picture of the show would be impressively and harmonizingly beautiful. Of course, this is a possibly hypercritical view, but the fact remains.

In the gallery, where it is necessary to dodge the supporting beams, there are

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papier mache arches also, but of smaller size, and instead of Fame and the modern chariot race, the figures in relief are those of tourists and the center piece is not a Maratta painting, but a plaque of Mercury with wings in his head such as did duty last year. Over each exhibit is a cluster of electric lights, each bulb set in a papier mache reproduction of an automobile lamp In the Coliseum annex, there are no decorations whatsoever. In the basement light green bunting hides the walls and the signs are raised white and gold letters on a dark green background.

In the First Regiment armory the decorations practically are the same as those in the Coliseum, save that red and yellow, and not green and yellow, bunting hides the roof and that there is no "art gallery." In the Seventh Regiment armory, or Tattersalls—whichever sounds most pleasing—the roof is or rather was red and blue—the fire this morning entirely destroyed the bunting—and there were kneeling goddesses on pedestals and white and gold letters on red backgrounds—that's all.

"Show weather" in Chicago rarely has been pleasant weather. Usually when snow was not actually falling, there was much of it under foot; when the skies were not dark and lowering, blustering, biting winds prevailed. These conditions have prevailed on the present occasion, but possibly because Chicagoans are accustomed to them, they have not served greatly to affect the attendance which has averaged good. There was the usual big mixed crowd present on the opening night and since then the gate has been not so large but of better class. It has not been so large, however, as to make sight-seeing difficult. Up to this writing there has been no great influx of dealers and no great volume of business has been transacted, nor have many of the big men of the big companies yet put in an appearance. The week is young, however, and the next four days probably will alter the situation.

The Ford, the Aerocar, and one or two others of the better known western cars that were staged at one or the other of the New York shows, are conspicuous by their absence here, but their places are taken by the Rambler and American Berliet, which in New York were exhibited at "exclusive shows" of their own. There also is in evidence the usual not inconsiderable number of western manufacturers of lesser renown or recent origin, most of whom are little known in the East. All are shown on a common footing. There is no line drawn between Selden licensees and "independents." As a result, the Pierce Great Arrow, the product of the president of the Association of Licensed Automobile Manufacturers, is a near neighbor of the Maxwell, in the manufacture of which the head of the American Motor Car Manufacturers Association is one of the vital factors. Similar evidence of equality is observable throughout the whole show. The display of "trophies of the chase" is one of the interesting features of the exhibition and in at least one instance, that of the Pierce Great Arrow, the display of big, bright silver cups attesting the prowess of the car and its drivers, is so large as to be worthy of a high class silversmithing establishment.

As a matter of course, none of the 1908 cars that had previously made their appearance in New York have been added to or subtracted from in the interim, and mention of more than their names would prove in the nature of tautology. They all are here—Pierces, Mitchells, Packards, Locomobiles, Maxwells, Columbias, Whites, Wintons, Cadillacs, Appersons, Thomases, Oldsmobiles, Nationals, Marmons, Elmores, Premiers, Reos, Pope-Toledos, Pope-Hartfords, Pope-Waverleys, Franklins, Stoddard-Daytons, Mathesons, Hayneses, Stevens-Duryeas, Corbins, Bakers, Studebakers, Jacksons, Rainiers, Stearnses, Royals, Dragons. Autocars, Lamberts, Knoxes, Northerns, Frayer-Millers.

Such of the cars as have not appeared this year at either of the New York shows, prove, in the main, a worthy addition to the list of show vehicles, and with one or two exceptions, are well worth studying because of their inherent characteristics. As exceptions to the rule, are found one or two radical departures from common practice, such eccentric features, in nearly every case being confined to one or two parts of the car, the machine otherwise, being perfectly regular in its construction. These displays of outre design are, however, comparatively rare, and equally to the point, even if somewhat startling.

Ample refutation of the old saw about the prophet's popularity on his native soil and its vicinity, is furnished at the Rambler exhibit, where the neat and workmanlike design of the 1908 models is well displayed in the polished chassis, which not long since graced the "private" show held in New York, though not appearing at either of the large exhibitions. In particular, the rear axle and transmission construction catches the eye, the compact arrangement of the gear box, together with the evident effectiveness of its operating mechanism, being sufficient to hold the attention of all who are truly interested in automobiles.

In the same situation as far as first appearance at one of the large shows, is concerned, the American Berliet exhibit, also is of interest. The clean-cut mechanism of the six-cylinder chassis on view, as well as the smooth and beautifully finished body surfaces, serve to draw attention to the studied simplicity of every line and curve, both of mechanism and superstructure.

Tincher and Its Unusual Features.

Among the more massive cars displaying thoroughly original design in every respect, is the Tincher, which gains somewhat in interest, from having skipped last year in its attendance upon the Chicago show. It is made in four and six cylinder motor equipments, depending upon the style of chassis employed, and in both runabout and full touring car form. The very latest development is the 90 horsepower six-cylinder machine, the chassis of which occu-

CENSUS OF THE SHOW.

PLEASURE VEHICLES.

Gasolene:		
One cylinder	9	
Two cylinder	42	
Four cylinder	183	
Six cylinder	31	
Total Gasolene Pleasure		265
Water cooled	224	
Air cooled	41	265
Four cycle	261	
Two cycle	4	
		265
Steam		5
Electric		36
Total Pleasure Vehicles		306
Touring cars	131	
Runabouts	95	
Closed cars	64	
Buggies	16	
		306
Chassis:		
Gasolene:		
Two cylinder	1	
Four cylinder	32	
Six cylinder	7	
		40
Electric		2
Total Pleasure Chassis		42
Total Pleasure		348

MOTORCYCLES.

Total		41

COMMERCIAL VEHICLES.

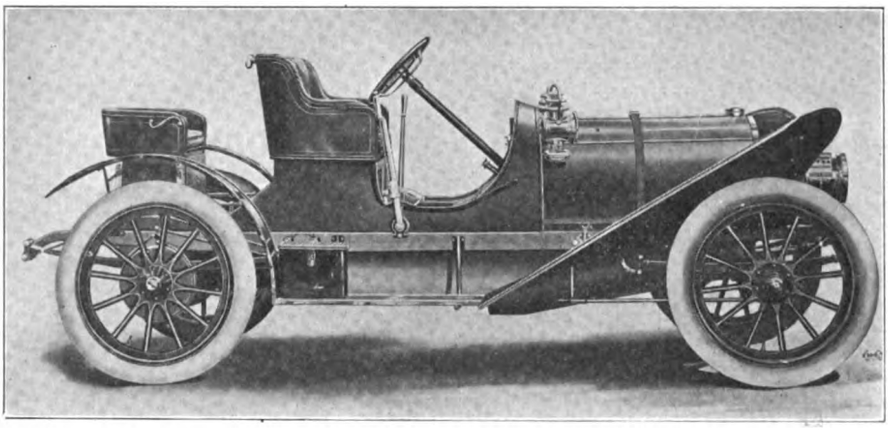
Trucks	24	
Delivery wagons	15	
Busses, Stages, etc	9	
Total Commercial Vehicles		48
Gasolene:		
One cylinder	1	
Two cylinder	16	
Three cylinder	1	
Four cylinder	15	
Total Gasolene Commercial		33
Air cooled	7	
Water cooled	26	33
Two cycle	5	
Four cycle	28	
		33
Electric		15
Total Commercial Vehicles		48
Chassis		9
Total Commercial		57

RECAPITULATION.

Total Gasolene Vehicles	347
Total Steam Vehicles	5
Total Electric Vehicles	53
Total Motorcycles	41
Total all Vehicles	446

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pies a prominent position on the stand, and which embodies the regular Tincher characteristics, such as the independent construction of the cylinders, which are cast individually, the separate compartment type of crank case, which has but a small intercommunicating area between the crank pits, overhead valve gear of original design; and selective sliding gear set, in which the selection is made by moving the hand lever vertically instead of in and out from the car, as is more usually the case. The manner in which this is effected is interesting mechanically, as the mechanism is particularly strong, and also provides an automatic lock for the sliding sets when not in use.



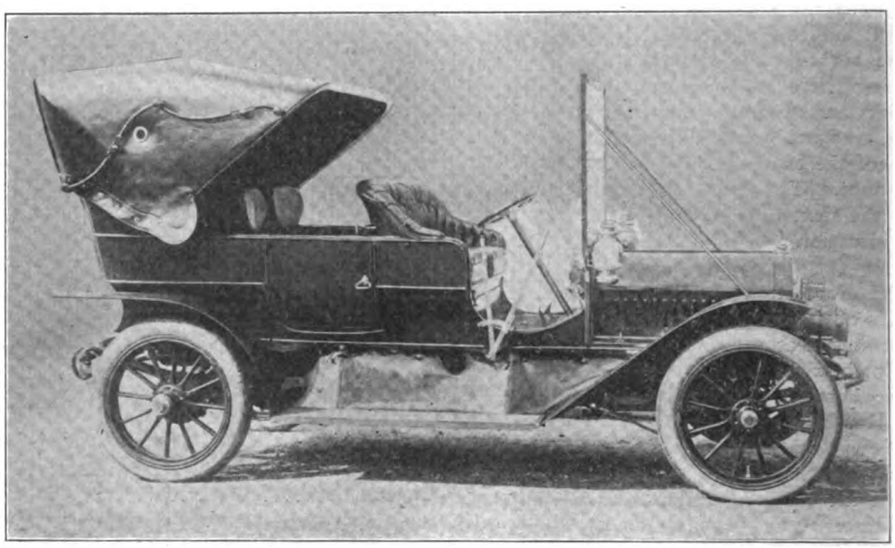
RAMBLER RUNABOUT

One of the most unusual features of the motor is the use of a double gas intake to the cylinders. To this end, the throttle chamber of the carburetter is tapped with a number of small pipes, one leading to each cylinder, to which they are connected by a small combustion pocket in which the spark plug is inserted and which is mounted entirely outside the cylinder proper. The arrangement is such that when the throttle is closed, these leads still remain open, so that for slow-speed, idle running, the gas is inducted directly over the plugs, and through independent paths to each of the cylinders. Ordinarily, the major portion of the gas passes through the regular channels to the intake valves in the usual way. At the same time, a very small amount of gas is drawn through the small leads by the check valves which close their delivery to the cylinder, and into the small combustion chambers. Ignited there, it creates a sharp flame, which is shot out into the combustion chamber proper in the center of the cylinder and at once effects a rapid and thorough ignition of the main body of gas. The cooling effect of the play of live gas on the ignitors, also is reckoned to be of no small value.

The chief specifications of Model H, which is the most recent quadruple type, are: Motor, 50-60 horsepower, 5 by 6 inches bore and stroke; clutch, contracting band, on a bronze drum; change gear, affording four forward speeds; double rear wheel brakes; semi-elliptic springs; wheel base, 127 inches; tires, 36 by 4, and 36 by 5 inches, front and rear.

Lorraine that Lights Its Way.

An automatic starting gear, a flexible propeller shaft, and an ignition system which also furnishes continuous current for lighting the lamps, constitute the principle features of the Lorraine car—a new product, shown for the first time. Otherwise, it is a well proportioned, touring vehicle of the familiar class which is above criticism as far as outward appearance is concerned. Its principle characteristics are: Four-cylinder motor, of 5 inches bore and stroke; leather faced cone clutch, with spring actuated plungers beneath the leather; three-speed change gear, optional as to method of actuation; shaft drive; full floating axle. The wheel base is 124 inches; the wheels are 36 inches in diameter, shod with 4½-inch tires. The mechanism is mounted, practically throughout, in annular ball bearings.



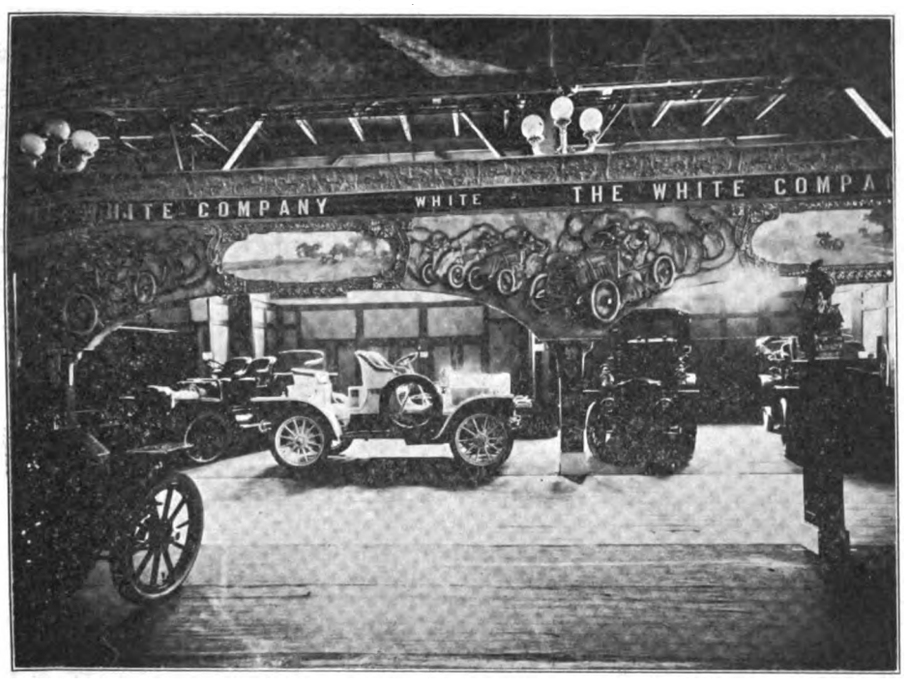
THE LORRAINE. A NEW COMER

The automatic starting gear, which is of the Hobbs-Renault type, consists of a simple air-compressor and tank, the active portion of the system comprising a small cylinder placed transversely of the car just back of the master clutch, and containing a piston and rod, the latter carrying a rack on its under side which is held constantly in mesh with a spur gear mounted loosely over the driving shaft of the car, but connected with it by means of a ratchet contrivance. The piston is held at the head of the cylinder, normally, by means of an internal helical spring. When air is admitted to the cylinder, the piston is driven out, throwing the crank shaft sufficiently to turn the motor over one compression. As soon as the controlling valve is released, the air is permitted to escape, and the spring returns the gear to its normal position.

The flexibility of the driving shaft, which is a most important and radical feature, is obtained through the medium of a bundle of small steel rods lying parallel to the shaft and clamped to it at either end, the shaft ends being loosely connected by means of a jaw clutch which permits freedom of motion to the ends through 22½ degrees of travel. The rods being firmly clamped in place, absorb any and all torsional strains thrown upon the shaft, the jaw clutch coming into play only under extreme conditions. By this means any minor speed variation due to the unevenness of the road or the angularity of the cardan joints are absorbed, and the gear teeth protected correspondingly, from shock. The shaft used in the car on view at the Coliseum has 24 of these driving rods, of 5-16 inch diameter, and sufficient length to permit the motion allowed by the clutch, without unnecessary distorsion. So far as is known, this is the only arrangement of its kind at present used in this country.

The ignition system of the machine consists of a 4-unit coil and accumulator which

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is of sufficient capacity to supply ignition current for an extended length of time, and also to light the lamps on the car. At the same time, a specially constructed, McKee dynamo is mounted on the left side of the motor, and positively driven from the shaft which actuates the air compressor. It is fully housed, and runs at rates which vary with the engine speed, a specially devised magnetic cutout acting to break the line circuit whenever the voltage exceeds the amount required for feeding the coil. The accumulator is "floated on the line," and serves to equalize the current supply, at the same time receiving frequent charges.

Aerocar's New Brake Equalization.

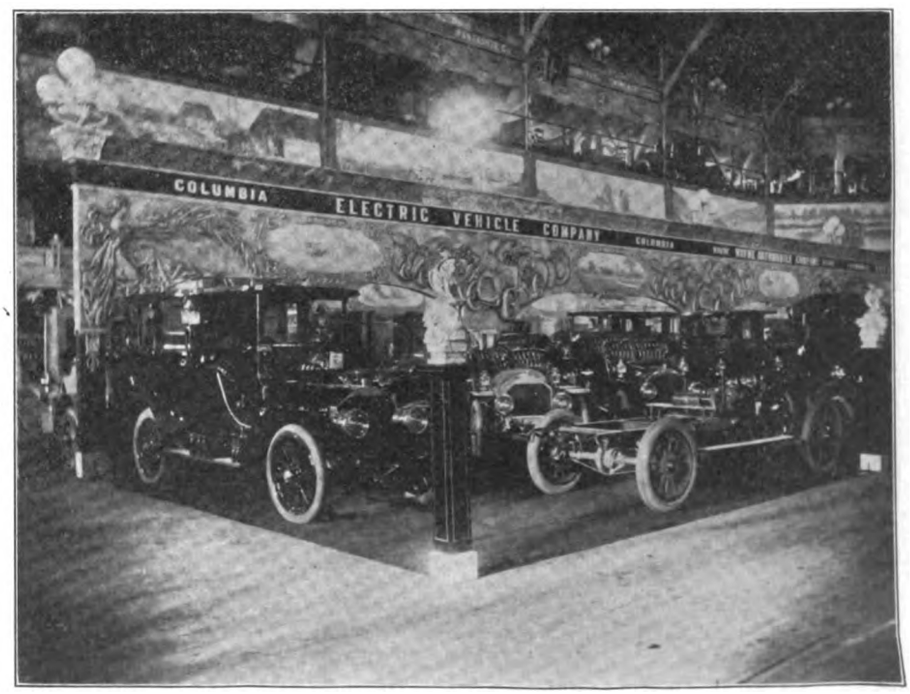
Two touring cars and one touring runabout comprise the 1908 line of the revived Aerocar Motor Co. Both touring models are practically replicas of last year's cars, except for sundry betterments of comparatively insignificant nature. The third model is a runabout, with new body lines of natty appearance and mounted on the chassis which is used on the 20 horse power car, altered sufficiently to suit the conditions of its use. The wheel base of this machine is 105 inches, and it is shod with 34 by 3½ inch tires. The wheel base of the touring car of the same power is 100 inches and it is shod with 32 by 3½ inch tires. The general features common to both these machines are: Four-cylinder, vertical, air-cooled motor, 4 by 4 inches, bore and stroke, multiple disc master clutch, sliding gear and shaft transmission affording three speeds forward, and shaft drive to the bevel gear floating differential, and hind axle.

The large touring car, which has a 40 horsepower, 5 by 5 inch water-cooled motor, has been altered somewhat since last year, but without changing its main specifications noticably. It is equipped with 34 by 4 inch tires, and runs on 115 inch wheel base. One of its new features is a novel system of brake equalization which embodies directly the principle of the bevel differential. To this end, the rocker arm which actuates the individual brake rockers connected to the bands outside the rear wheel drums, instead of being articulated to them by means of a short balance beam, as is most commonly done, carries at its outer extremity a small bevel pinion which is free to revolve upon it, and which engages on either side a corresponding bevel segment, one of which is mounted on each of the rocker arms. In this way, while the motion of the main rocker arm is transmitted at once to both of the brakes, they are permitted a certain amount of relative motion, which the bevels automatically compensate, invariably furnishing an even distribution of the retarding effect between the two wheels.

Pungs-Finch and Its Sliding Dogs.

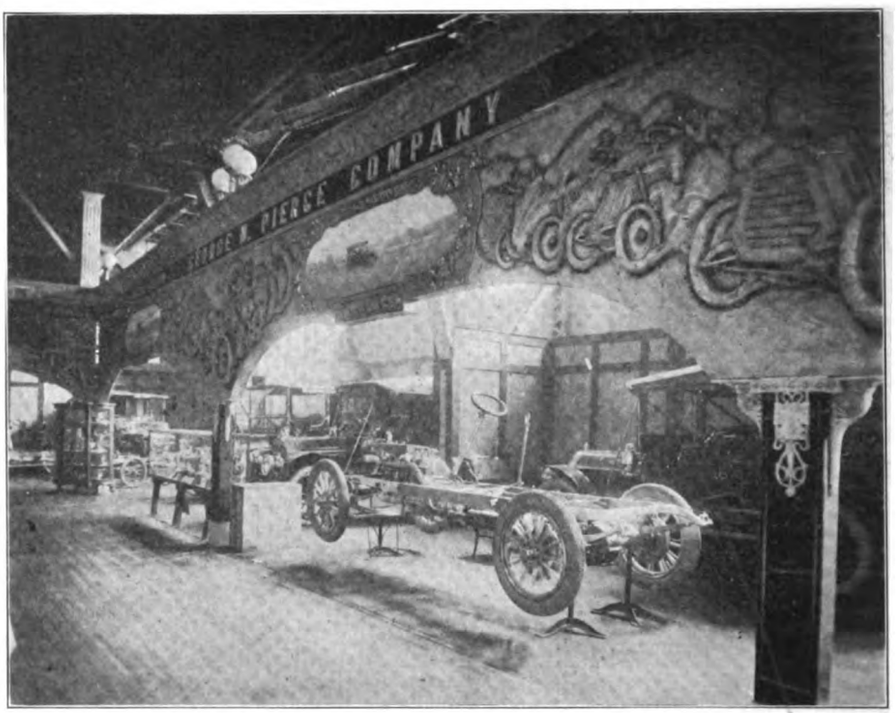
Of the two types of Pungs-Finch, on view, one, known as Model H, has these specifications: Four-cylinder vertical motor, 4½ by 5 inches bore and stroke, rated at 28-32 horsepower; transmission by multiple disc clutch, three-speed selective type change gear, with direct connection on the high, and shaft drive to the full floating type rear axle. The wheel base is 106 inches, the wheel and tires sizes are 32 by 4 inches, front and rear, and the weight is 2,400 pounds. Model 35, on the other hand, has a 40 horsepower, 4¾ by 5-inch quadruple motor; is similar to the other in general design, and has the same specifications as to wheel base and tire sizes, but with its touring runabout body, weighs 2,200 pounds.

Two points of novelty are observable in connection with the change gear set, the arrangement of which is somewhat different from that usually found, in addition to which, the use of keyless, hexagon shafts for all sliding gears, is an interesting provision. The chief feature of remark, however is the method of obtaining the second and third speeds by means of sliding dogs, whereby it is possible to change either up or down, and at any rate of car speed without danger of stripping the gears. To this end, the gears on the lay shaft are mounted loosely and are held constantly in mesh with their mates on the driving shaft, connection with the shaft being obtained by means of the dog, which locks one or the other to the lay shaft, according to the speed required.



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In order to balance the weight on the runabout, the motor is set further to the rear than in the touring car, the radiator thus being brought slightly back of the front axle. This constitutes practically the only difference between the two models, save that of the power element. Both scroll end full elliptic springs and semi-elliptics are employed, but their use is practically interchangeable between the two models, and is directed by the option of the purchaser. Neither car has been altered from last year, except in minor ways.

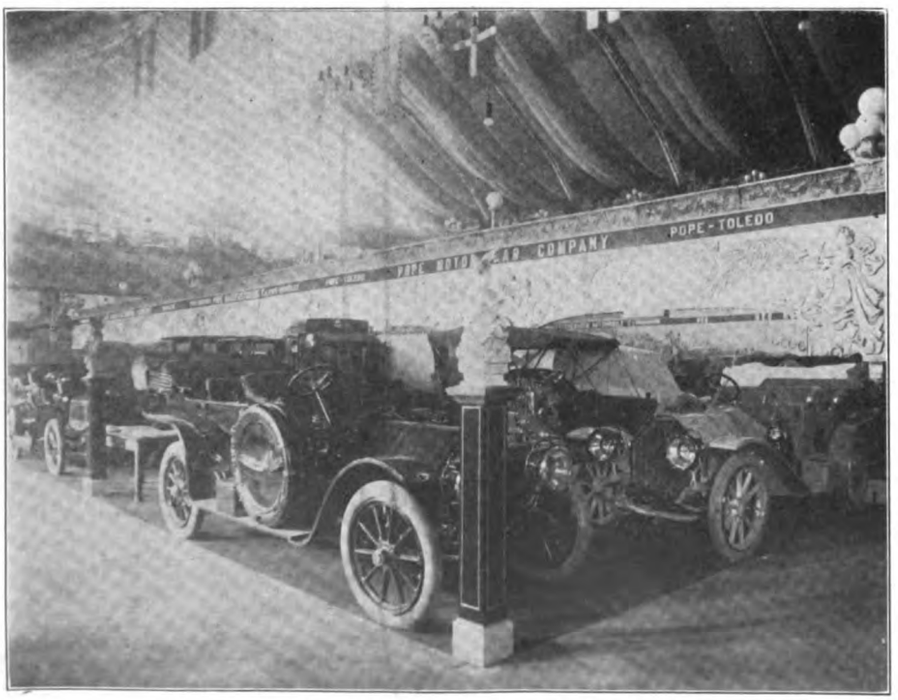


C. I. V. Full of Distinctiveness.

One of the newcomers at the show is the C. V. I., a six cylinder car of the general straight line type of body design, of broad and roomy construction, weighing some 2,600 pounds, and running on 36-inch wheels, shod with 3½ and 4-inch tires, front and rear, with 117-inch wheel base. This is one of the "new material" cars, as is shown by the use of a special vanadium alloy in the spring steel, as well as the liberal use of annular ball bearings. In addition to this, the general effect of the machine is decidedly out-of-the-common, in that it is set extremely high off the ground, and is completely enclosed underneath, the under pan even being headed up at the rear, and provided with drainage plugs, so that no oil can be spilled on the road, while, by the same token, no dirt can find its way into the bearings.

The motor, which is rated at 40 horsepower, has 4 by 5-inch, T-head cylinders, cast in pairs, with jackets integral, and takes its rating on the basis of a normal speed of 1,200 revolutions per minute. Ignition is double, with one set of plugs, a Bosch magneto and six unit Connecticut coil being provided, with accumulators as primary source. The crank shaft is mounted in seven bearings in all, the five inside bearings being plain, and bushed in Parsons white metal, while the front support is a single ball bearing, and the rear bearing is also of the annular type, but doubled, to take care of the load on the fly wheel end of the shaft. The crank shaft itself, is of 1¾-inch diameter, made in chrome nickel steel, heat treated and ground

A point of original design is found in the mounting of the cam shafts, which are placed in independent housings, quite apart from the crank case, and so constructed that the shafts may be removed without interfering with the adjustment of the crank shaft or its bearings in any way, and without disturbing the setting of the motor in the car. The method of driving the cam shafts also is worthy of note. The ends of the shafts are squared, and over them are fitted driving dogs, carrying six longitudinal pins, which fit corresponding holes in the faces of the two-to-one gears—the latter being loosely mounted on the shafts. The driving dogs are held on the squared portion of their shafts by means of locking nuts and washers. By this means it is possible to secure any desired variation in the timing of the valves, without the necessity of altering the seating of any keys, "spotting" of the shafts, or otherwise fitting the valve gear. Valve seating, throughout a wide range of possible alteration, thus is made merely a matter of adjustment.

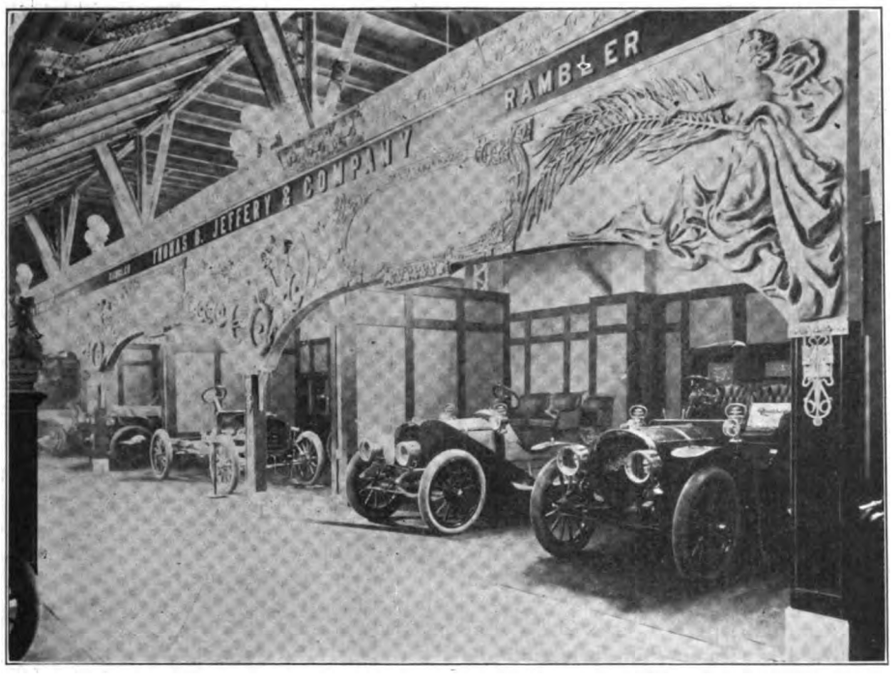


The gear housing, like that protecting the cam shafts, is made to be removed without disturbing the motor in any other respect, and, in fact, the entire power plant, is designed to be taken down piece-meal, if necessary, without disturbing any parts but those it is desired to get at. In addition to these features, may be mentioned, the use of an "equal path" water manifold in the cooling system, which is similar to that used in the intake piping, a method of splash lubrication which provides for uniform distribution of the oil between the cylinders, several crank pits, by reason of a distributing manifold led below the crank case from end to end, and equipped with a gauge glass, as well as the adjustable nature of the fan, the pitch of which may be altered to suit temperature conditions.

Lauth-Juergens's Unusual Option.

A most unsual option is offered to the prospective purchaser of the Lauth-Juergens car, in that practically the same machine in all other respects, may be had with motor either of the T-head or straight cyl-

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inder types. In the case of the T-head motor, the cylinder dimensions are 5 by 5½ inches, and the rated output, 45 horsepower. The straight cylinder motor, on the other hand, measures 5 by 6 inches, bore and stroke, and is rated at 50 horsepower. The former is of rather conventional pattern, has individually cast cylinders, four-compartment crank pit, long crank shaft bearings, and has its cam shafts mounted in five bearings, to prevent any possibility of distorsion. The straight cylinder type, however, embodies some little novelty in the method of fitting the valve gauges in the cylinder heads, as well as in the manner of connecting the inlet and exhaust manifolds. The valves are actuated by means of overhead walking beams, and are of large area.

Another novel feature of this car is found in its master clutch which is of the disc type, having but a single live, and two dead plates, one of which is a fibre disc, and the other a metal disc, to which it is bolted and which, while compelled to turn with the fly wheel, is held away from it a very short distance by means of four light springs. The action of engagement, which is effected by means of a set of dogs, forced outwardly by a cone under spring tension, is to clasp the fibre disc between the live and dead metal plates. The light springs back of the dead plate, however, tend to relieve the crank shaft and flywheel of any end shock due to the engagement. The clutch has an enormous amount of surface, works under comparatively light spring pressure, and is claimed to be extremely sensitive and durable.

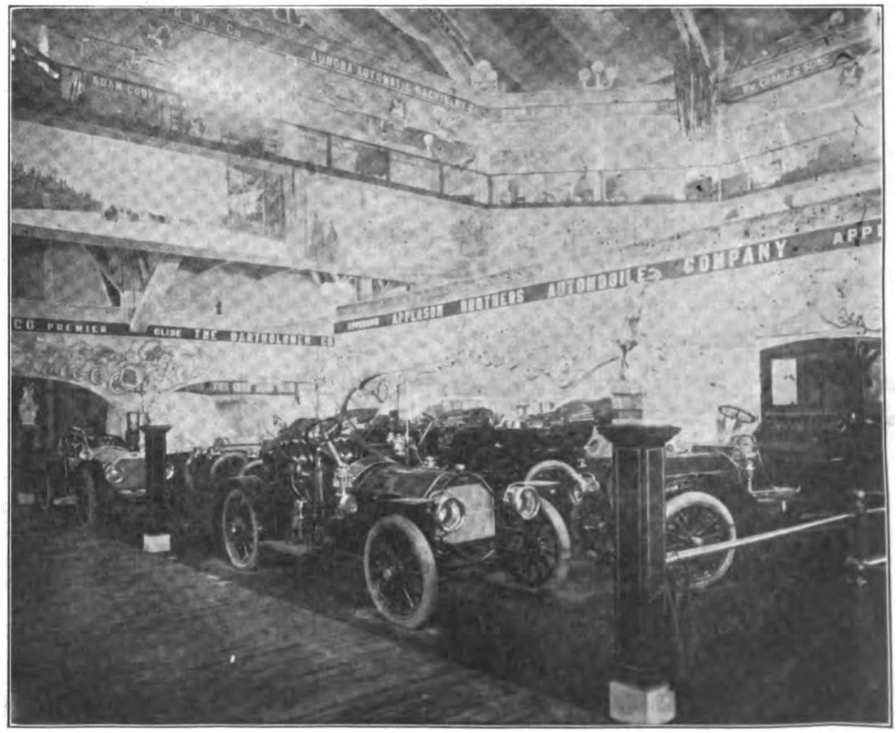
The gearset is of the somewhat rare compound type, in which part of the changes of speed are obtained by positive dogs, and part by the usual sliding pinion movement. In this case, the low and reverse speeds are obtained by means of a single sliding gear, while the third and fourth are developed by means of a single sliding dog member on the driving shaft, which engages either of two gears loosely mounted on it. A special feature of the dog clutches is that alternate teeth on both male and female members are made a fraction of an inch longer than the others. As a result of this a positive lock is secured at the first effort at engagement, as is claimed, all chattering and burring of the teeth thus being eliminated.

The general specifications of the car include, wheel base, 118 inches; wheels, 36 inches diameter, shod with 4½-inch tires; semi-elliptical springs; shaft drive; floating type axle, straight line type seven passenger body. The car is designed to be driven largely on the high gear, which it is stated, is made possible by the special form of clutch.

Aurora is Nearly Automatic.

One of the lighter cars, designed throughout on original lines, and adapted for the use of the owner of modest proclivities, and for whom it is particularly well suited, is the Aurora, which also presents the unusual feature of being outfitted with either pneumatic or solid tires at the option of the buyer. It has many of the strong points of the "big" cars, such as unit power plant supported on three points, shaft drive, three-quarter platform suspension, and simplicity and continuity of design. Its principle specifications are these: Motor, double-opposed. 4½ by 5-inch bore and stroke, rated output 20 horsepower; change gear, planetary, affording two forward speeds and the reverse; double jointed cardan shaft, "spring drive," the torsion strains only being taken up by the torque rod; wheel base 80 inches; wheels, 32 by 3 inches, front and rear alike; it tips the scales at about 1,500 pounds.

The power plant is supported by means of studs taking hold of the cylinder heads, and seated in the frame, and of a pedestal bearing on a cross member of the frame which supports the driving shaft just back of the change gear group. This same member, which is of peculiar shape, also serves as support for the brake bands on the change gear, and gives considerable rigidity to the frame. The speed control is by means of a side lever which applies the high and reverse speeds, while the low forward speed and the brakes are controlled by



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means of a second foot pedal. In this connection, the construction of the brakes is of interest, in that the single pedal movement serves to apply both external and internal bands on drums attached to the rear wheels. To this end, short equalizing levers are connected to the respective bands, so that the pull applied to its center is evenly distributed between them.

It should be observed that the entire power plant of the Aurora, is placed in front of the dash, and is therefore, thoroughly accessible. In addition to this, a number of unique provisions render its regulation and repair an essentially simple matter. Illustrative of this, is the use of claw-like cams for applying the brake bands on the transmission, which, instead of being secured permanently to the frame, merely rest upon it. Adjustment of the brake tension is made by shortening the connecting linkage, and the application of the pull on the bands is obtained by prying the cam ends of the levers against the frame. The original features of the car are by no means confined to the immediate mechanism of the power plant, however, even the radiator being of a special pattern, with vertical tubes of triangular cross-section, staggered, and designed at once for strength, and cooling efficiency. Water circulation is by thermo-syphon action, and the car is as nearly automatic as the limits of its design permit.

Suspension a Pullman Feature.

The application of a name, long familiar in connection with transportation by rail, to a road vehicle, in the case of the Chicago-built Pullman car, is given to a well-drawn car, about which its makers make the somewhat radical claim that it is so very thoroughly built that not simply will it not wear out in four or five years, but that its owner will have no cause to feel out of style in driving it five years after its purchase, any more than on the day it leaves the shop. Nor is there any apparent cause for doubting the reasonable nature of the claim. The machine is, in the main, of conventional model, and has the following general details: Motor, 5¼ by 5½ inches, bore and stroke; rated at 50-60 horsepower; selective, sliding gear transmission, with contracting band clutch and shaft drive; wheel base, 120 inches; wheels, 36 inches; tires, 4 and 4½ inches diameter, front and rear.

Of the points which are most dwelt upon by the makers, the use of independent three-point suspension for motor, gearset, and rear end of frame, is the most important. The motor is hung by means of a manganese bronze yoke, taking hold of the sides of the crank case toward the front, and reaching forward to a fore and aft bearing on the under side of the radiator cradle, the rear end being supported by means of two very heavy arms, resting directly on the frame, there being no sub-frame. The gearset is hung by a similar yoke at the fore end, its point of support being a cross frame member just back of the clutch, while the rear end is hung from both sides of the frame. The rear of the chassis has the not unfamiliar three-point platform mounting, with radius rods adapted to take up the traction strains.

The motor has a ¾-inch offset in its cylinders, unusually large valves, bevel gear fan drive, with friction clutch to prevent damage to the gears owing to sudden changes of motor speed, and a very large exhaust manifold, which is provided with expansion joints between the cylinders to prevent straining the motor by alternate expansion and contraction of the pipe. The latter, which is 3 inches in diameter, is led to the rear of the car without contraction of area, and by very gradual bends.

The clutch is fully housed in a drum made integral with the fly wheel, and the selective mechanism of the gear shifting arrangement which also, is fully housed, is provided with an interlocking device which engages the pull-out rods of the gearsets whenever the clutch is engaged, thus preventing inadvertant misuse of the gears. The third of the four forward speeds in this device, affords the usual direct through connection. Five brakes are used and are applied externally and internally to the rear wheels, and to the transmission shaft. The rear brakes are equalized by beams extending entirely across the chassis, with direct center draught, and are intended for regular service. The fifth brake is actuated by an independent pedal on the extreme right side of the footboard, purposely placed out of the way of ordinary use, where it will be available only in case of extreme emergency.

Oakland Proves a Good "Find."

Of all the moderate priced cars, none is more fetching than the Oakland, which is but just making its debut. It is the latest product of the hand of A. P. Brush, and embodies many of the features characteristic of his other achievements. This car, unlike the others, however, makes no departure from tradition in its outward appearance. but is a complete reproduction in miniature of what might be termed a composite of the smart American touring car of 30 horsepower. Its two-cylinder vertical motor is rated as 20 horsepower, and the vehicle, complete in touring form, weighs 1,650 pounds. At its price, $1,500, with top and lamps, it looks like an unusual bargain.

Of its more intimate details, the following may be mentioned: Motor, twin, vertical, water cooled, 4½ by 5 inches, bore and stroke, balanced by crank weights and auxiliary counterbalance; floatless carburetter; thermo-syphon water circulation; transmission, planetary, with a single group of idle pinions, which are counterbalanced; fully enclosed, and mounted directly on the driving shaft to the rear axle, the entire power plant being inclined to afford a straight line drive under normal conditions; tubular axles, original steering gear, semi-elliptic springs in front, and full elliptic in the rear; oak frame, reinforced through the waist, single lever speed control. Furthermore, a point which is of particular interest in connection with the production of a car of this general type, either with runabout or touring bodies, the equipment furnished with the Oakland is complete in every detail, and proportionately equal to that supplied with any of the high priced and elaborate machines of the day.

The wheel base is 96 inches, and the tire sizes may be either 30 or 32 by 3½, according to the option of the purchaser. The runabout body is of the straight line type, with the usual rumble box in the rear, the lines of the touring car following the same general principle. The general appearance of the machine, which, as already stated, follows accepted practice in the delineation of the larger cars, is surprisingly gratifying in the face of the frequently inharmonious and discordant results of attempts to produce a car of moderate size at a proportionate cost.

Diamond T is a Real Roadster.

One of the most smartly designed runabouts of the road-scudding type, is the new Diamond T, which is the latest addition to a line, shown for the first time, one year ago. The touring car and limousine types are based upon what is practically a reproduction of last year's chassis. The roadster, however, is entirely new, and unlike perhaps a majority of the roadsters staged at the show, has been designed from starting crank to tail light bracket with a view to its exclusive use as a two passenger roadster of the practical touring type. Among its unusual features are the use of a gravity feed fuel tank of oval section, mounted back of the seat, its cradle embodying a very respectable amount of storage space. Considerable additional storage room also is obtained by the use of a trunk, placed in the rear of the frame, which also serves the purpose of a chauffeur's seat upon requirement. The front mud guards are supported at the forward end by means of a bracket fitting in a socket on the frame, while at the rear, they are hinged to the broad step, which takes the place of a running board. As a result of this, when it is desired to gain access to the engine for any reason, one of the guards is simply released from its bracket support and inverted over the rear guard, the effect being the same as though it were completely removed.

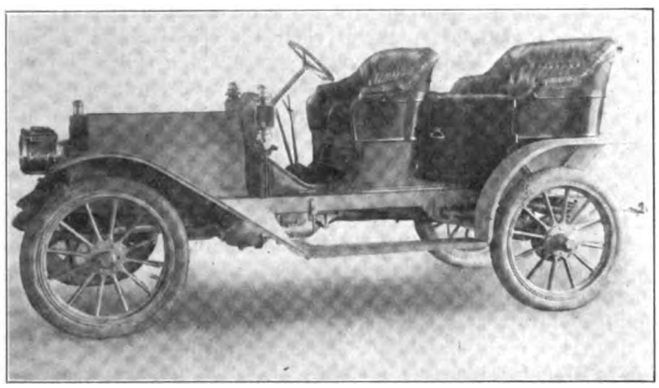
In the braking equipment of this machine all four of the rear wheel brakes are applied simultaneously by means of either the foot pedal, or the emergency lever—the latter also disengaging the leather-faced cone clutch. The brake links are articulated to the ends of a short equalizing beam on each side of the car, the pulling connection being applied at the center of this vertical member. This equalizes the pull on the two brakes on each wheel, while the braking effect is evened from wheel to wheel, by means of a long beam stretching clear

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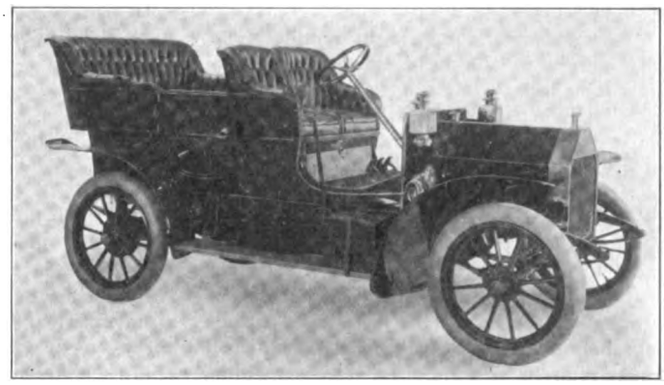
across the car, the actuating force being applied at its center.

Another unique feature of the car is its spring suspension, the rear members being practically flat, though of the construction usually termed semi-elliptical. They are 56 inches in length, and are equipped with two damper leaves placed on the upper side. On account of the low mounting of the frame, the sills are "kinked" over the rear axle, to give the proper clearance.

The specifications of the roadster are: Motor, 45 horsepower, with cylinders 5 by 5 inches; three-speed selective change gear; shaft drive; wheel base, 114 inches; wheels, 36 inches diameter, shod with 4½-inch tires. The touring car has 124-inch wheel base, and a 4¾ by 5 inch, 40 horsepower motor, connected to a progressive type change gear. Otherwise it is much the same as the roadster as far as general arrangement is concerned. Both cars are mounted on Timken roller bearings, the change gear group also being mounted on roller bearings.



MONARCH



AUBURN

Originality of the Monarch.

Of several interesting and original points in the design of the Monarch cars, which are entirely new models this season, perhaps the most appealing to the average observer is the arrangement of the unit-power plant which is mounted on a three-point support, and besides being fitted to withstand the usual mechanical stresses of road service, also has been treated in a manner which, several years ago, would have been termed "fool-proofing" it. The result is an attractive looking machine, of few external parts, well protected mechanism, and an effective disposition of its vitals.

The basis of the three-point suspension system adopted is a sound one. The center of the front end of the frame, as being the approximate center of longitudinal frame distorsion, is taken as one of the three points of support, while what approximates pretty nearly to the center of the frame fore and aft, is taken as the transverse axis of support, the frame sills being given the load at this point. Motor and change gear are bolted strongly together, the juncture being so arranged as to include a sizeable housing for the master clutch. The gear case is supported entirely by this housing.

The rear axle group is peculiar and very ingenious in that instead of the usual torque and radius rod group, or torque member and spring drive, an attempt is made to compensate for the radial tendency of a semi-positive rear spring mounting by means of a linkage giving an approximately vertical motion to the rear axle as it responds to spring deflection. To this end the front ends of the rear springs, instead of being shackled to the spring hangers in the usual way, or bolted directly to them, are attached to one leg of the forked end of the radius rods, which in this case perform simply the function of distance pieces and correcting members. The other leg of the forked ends is attached to the spring hanger in the usual way. The end of the so-called distance rod, thus replaces the spring shackle and resembles it in general form, except that it is made integral with the distance rod. The latter, however, instead of being articulated to the axle in common fashion, has an intermediate joint, which permits it to vary its alignment. Under spring deflection, the effect of this arrangement is to compensate the usual radial motion of the axle due to its radial motion about the front spring hanger, as a center. The torsion tube is hinged to the rear end of the gear case, and so takes its support from the three-point mounting of the power plant.

Two types of car are turned out upon the same chassis, namely a roadster runabout, and a touring car. The specifications of the chassis are: Motor, 4¾ by 5 inches, bore and stroke, rated at 40 horsepower; T-head cylinders, with intermediate expansion joints in the exhaust piping; double ignition by magneto and accumulator; clutch, multiple disc, large diameter rings, bronze and iron; change gear, three forward speeds, with direct connection on high, lay shaft stationary on high speed, sliding sets locked when out of engagement, selective operation; transmission and axles of original design, mounted on Timken roller bearings; wheel base, 112 inches, wheels 36 by 4 inches, front and rear.

Auburn Shows Improvement.

Both the runabout, known as Model K, and the Model C, touring car shown at the exhibit of the Auburn Automobile Co., are based upon the same chassis. Structurally, it is but little altered from the type shown last year, and presents the following features: Double opposed motor with 5¼ by 5-inch cylinders, rated at 24 horsepower, and mounted under the body; transmission by planetary change gear and centre chain to the live rear axle, which is mounted in roller bearings; wheel base, 100 inches, and wheel and tire sizes, 32 by 3½ inches.

As is the case with a large number of car makers this year, the Auburn company has provided a more roomy body for its 1908 product than was offered last year. The new body design follows the popular straight line idea. The new radiator, which is of original design, also contributes to the thoroughly modern air of the car. The low rakish body of the runabout type, with its single box rumble seat, is also perfectly in line with the present style, and is a great improvement over anything which its makers have offered hitherto.

Pierce Racine in Three Models.

Of the three general types of Pierce-Racine exhibited, Model "E" only, is new this year. In a general way it is similar to the other cars, except that it is a little less powerful, correspondingly lighter, and is in that way better suited to the purposes of some users than the heavier type. The specifications include: Motor, 30-35 horsepower, four-cylinder, vertical, and built in accordance with the tenets of current design; change gear, three-speed, progressive; transmission by shaft, to floating type rear axle, mounted in ball and roller bearings. The wheel base is 106 inches, and the tires are 34 by 4inches. The body is mounted on semi-elliptic springs, 41 and 49 inches in length front and rear, and is of straight line design.

The larger model has a 40-45 horsepower motor, much the same features in general,

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as Model E. but has longer springs, and heavier parts where the increase in strength which that implies is required. Model D, also is made in the form of a roadster runabout, the same sort of body being adaptable to the smaller car if required. The roadster body is trim and clean cut, follows the straight line pattern of the touring body, and provides the usual storage accomodation for chauffeur and impedimenta on the rear deck.

Mason's Control Forms a Feature.

Although not new, and but little altered from last year—if at all—the Mason car is entirely new to the show, and also presents a number of individual features which serve to place it well to the front among vehicles of its general class, that is to say, those having opposed motors placed under the body, planetary gears, and center chain drive.

The motor is of the straight cylinder type, with valves in the head, mechanically actuated by long push rods, and is provided with an exhaust compression release, used for starting purposes, which is operated by an endwise movement of the cam shaft, brought about through the rotation of a face cam, which displaces it against the resistance of a spring, and permits the exhaust lifters to rise over special cam faces provided for the purpose. The motor is mounted to the left of the frame, the change gear being to the right, and the fly wheel approximately in the center of the machine. The high speed clutch is of the leather-faced type, seating directly in the fly wheel, and is of unusually large diameter.

The method of controlling the transmission is unique, in that a braking effect is obtained by depressing either of the two pedals, or pulling back the side lever. The left hand pedal is designed to apply one set of brakes, also disengaging the clutch. The right hand pedal actuates the reverse transmission band, thus producing a braking effect when the car is in forward motion. The lever which controls both high and low forward gears, also controls the rear wheel brakes when drawn back to its extreme position, thus making a third means of retardation. A neat mechanical provision in the lever connections, makes it impossible to engage the low gear when drawing the lever out of its high speed position, without first returning to the neutral.

The specifications of the machine are: Motor, 5 by 5 inches, bore and stroke, rated output 24-28 horsepower; chain drive to center of rear axle, Hyatt roller bearings in rear axle, ball bearings in front axle; wheel base, 94 inches; tires, 32 by 3½; weight, 1,850 pounds. A neat, straight line, five-passenger body is provided, and the fuel and stores are carried under the hood.

Perfection's Change Gear Option.

Another of the new comers, not only to the show, but to the buying public as well is the Perfection—a medium weight four-cylinder touring car, of generally standard proportions. It is somewhat out of the ordinary in respect to its change speed gear, which may be either planetary or sliding pinion in style, according to the option of the purchaser, the choice being permitted under a slight difference in cost between the two types of gearing.

Its details may be summed up as follows: Motor of 4⅜ by 4⅞ inches, bore and stroke, valves on the left side, jump spark ignition, splash lubrication, rated output, 30-35 horsepower; drive by shaft to floating rear axle; wheel base, 116 inches; tires, 32 by 4 inches; weight, 2,400 pounds. It is suspended on Triple Action springs, has a pressed steel frame, external band brakes on the rear wheels, and emergency brake on the transmission.

Western Roadster a Newcomer.

In the Western Roadster is to be found a typical light running vehicle of the present popular type, fitted with a neat body carrying two passengers and having a combination rear, which may be used as a simple storage box, as a single or double seat, or may be removed entirely leaving a flat deck behind, as required. It is propelled by an 18-20 horsepower motor of the front horizontal opposed type, having cylinders of 4½ by 5-inch bore and stroke, respectively. The motor is cooled by thermo-syphon circulation, and is directly connected to a three-speed change gear of the selective, sliding pinion type, the motor and change gear being embodied in a unit mounting of the fully enclosed type, and taking its support through the cylinder heads which are carried by the frame sills, and a cross frame bearing at the universal joint just back of the gear box. The enclosure of the plant, also includes the fly wheel and master clutch, and the arrangement is simple and neat appearing. The gear of the frame is supported on 48-inch low set springs, while the semi-elliptical front members are 40 inches long. The Western is a new car, never before exhibited, and in fact, is only just ready for the market, its appearance at the show coming practically unheralded.

Refinements of the Halladay.

Although it has been built for several years, the Halladay touring car is absolutely new to the Chicago and other shows, and consequently is of interest on that account, if for no other reason. As compared with its prototype of last year, it stands on a 10-inch longer wheel base, has a new and improved type of motor, and is otherwise improved in several respects. It mounts a roomy body and differing from most of the "jobs" of its class in that the back of the front seat is upholstered instead of being finished in common with the exterior surfaces. This provision, while adding something to the comfort of the occupants while traversing rough country roads, as it doubtless may, also is of advantage in that it removes from the tonneau all varnished surfaces, and relieves its occupants of any sensation of being confined in a compartment which is liable to be marred unless duly avoided and protected.

The specifications of the machine include the motor, which has a rated output of 35-40 horsepower; the change gear and transmission, which are by sliding pinion gear set, affording three forward speed changes, and a short coupled, direct acting, bevel gear drive; the wheel base, which is 118 inches, the tires being 34 by 4 inches, and the weight, which is 2,650 pounds. As appears to be a growing custom among a large class of makers, the regular equipment of the car is complete and includes two 9-inch searchlights, in addition to the dash lamps, tail lamps, horn and tools.

Byrider Electric a Trim Rig.

But one of the several newcomers at the show proves to be of the electric class, this being the Byrider Electric, which is a trim, low-hung, victoria runabout, with full victoria or stanhope top, and comfortable upholstery. Its running weight is 1,650 pounds, and it has these general characteristics: Wheel base, 72 inches; tires, 32 by 3½; springs, full elliptic rear and semi-elliptic front; transmission, by noiseless gear reduction and double chain drive to the rear wheels, both front and rear wheels being mounted on Timken roller bearings. while the transmission is hung on imported ball bearings. The electrical equipment comprises a single series-wound, 2 horsepower motor, a 24-cell battery of the 9 M V Exide type, a continuous torque controller, affording five speeds varying from 6 to 22 miles per hour, left hand control with side lever steering gear, double internal brakes on the rear wheels as well as a transmission brake, and the usual safety provisions and equipment of lamps and electric meters. The mileage is catalogued at 40 per charge on high speed, and 70 miles on the second speed.

Price Runabout Proves Radical.

In the light runabout exhibited by W. C. Price, is found an extreme and altogether startling novelty in the shape of a two speed and reverse, combination friction and belt drive. The vehicle itself is of the small runabout type, weighing only 700 pounds, and equipped with single seated body with top, and a box behind which may be used as a rumble seat if desired. The motor is air-cooled, double opposed, has cylinders 3¼ by 3¼ inches, bore and stroke, and is rated at 10 horsepower.

The change gear comprises a horizontal extension of the crank shaft, and a secondary or driven shaft below it, communicating with the live rear axle through the usual cardan shaft, but so contrived that by moving the side lever. its distance from the main driving shaft directly above it, may be altered to suit the required conditions. Each of the two shafts carries a two-step cone pulley, of respective diameters of 4 and

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6 inches, the steps being reversed on the two shafts, as in the case of the speed cones commonly employed in shop practice. The shafts are connected by double belting adapted to establish the driving relation whenever the lower shaft is dropped low enough to secure the proper tension. Shifting the belt from one set of pulleys to the other, as effected by means of a regular belt shipper, called into requisition when the tension is released, has the effect of altering the driving ratio and so "changing speed."

The reverse is obtained by means of a pair of friction wheels, brought into engagement when the lower shaft is raised to its full height of travel, the forward driving belt at the same time running idle and loose, and kept free of the driven pulley by virtue of its centrifugal force. The driving member of the reverse friction group consists of a wedge pulley of end wood, while the driven member is a grooved sheave of simple cast iron. The car has 98-inch wheel base, and in stock models has 30 and 32-inch wheels, shod with 1½-inch solid tires. The show car, however, is equipped with 28 by 3-inch pneumatics.

MOTOR BUGGIES.

Last year it became evident for the first time not simply that there was a field for



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the high wheeled motor buggy and that it was "taking hold," but that the manufacturers were evincing an interest in its advancement, no less persistent than the response of the buying public was ready. These conditions are now so well established that interest in this unique type of vehicle has become general and very extended. The show boasts a coterie of no less than eleven machines, of which the prototype of its class—the Holsman—the Schacht, the Reliable Dayton, and the Pontiac, have already been shown this year in New York, along with others of their kind.

Duer the First Four Cylinder Buggy.

Of those which are new as far as the present show is concerned, probably none is likely to attract greater attention than the forthcoming type of Duer, in which is installed for the first time in any vehicle of the sort, a four-cylinder V-type motor. This radical innovation of the radical, despite its apparent leap into the realm of the mechanical extremes, nevertheless is not so very complex in reality, and as a matter of fact, is adapted to go into the same chassis as the present Duer twin motor type.

The 22-24 horsepower motor itself is an original device. The cylinders are 4 inches, bore and stroke, air cooled, and the valves



BUGMOBILE

are mechanically operated, the exhaust being located in the heads, opened by means of walking beams and push rods from the single cam shaft, while the inlets are placed in offset pockets, and are worked from beneath by direct thrust. Two fans are provided for cooling purposes; one—belt driven—is placed in the usual position at the front of the machine, while the other is embodied in the fly wheel. The motor has a three-point mounting, which is effected by means of two tubular members reaching from side to side of the frame. The forward tube is attached to the crank case above the shaft, by means of two suitable lugs, while the rear end of the crank case is hung from the second tube by means of a collar which completely surrounds the rear crank shaft bearing. The transmission is the same as that used during the past season on the Duer cars, that is to say, a special form of multiple bevel drive, affording two forward speeds and a reverse, with cable drive to the wheels.

The complete vehicle shown, is driven by the regular 12 horsepower opposed motor used in the 1907 cars, and differs from that machine only in point of a very few details. These have been confined principally to alterations in the design of the body, such as reducing the width of the seat, shortening the over-all length, and otherwise compacting it.

The Staver carriage stands out in a somewhat conspicuous and very "up-to-the-minute" light, owing to the use of vanadium steel in its make-up. As compared with the machine shown for the first time last year it reveals a number of alterations, of more or less significant nature. The two-cylinder water cooled motor is 5 by 5 inches in cylinder dimensions, instead of 5 by 4½ inches as last year. The rated output is 20 horsepower. The wheel base also has been increased 7 inches to 78 inches, and the tire sizes have been increased from 1⅜ inches, to 1¼ and 1½ inches, front and rear. The body is 5 inches longer than before, and full elliptic springs with scroll ends, are now used in the rear, instead of the semi-elliptic equipment. The present springs are shackled at both ends, and the driving strains are taken up entirely by means of suitable distance rods. The back axle is cranked some 3 inches, in order to lowar the center of gravity of the body.

As in the former model, the driver sits on the left side of the vehicle, steering by means of a side tiller, and controlling the machine by two pedals and a suitable gear lever on the steering column. The pedals are now of the piano lever type instead of the push plate pattern, however, and one or two other alterations of like significance have been adopted. A new mechanical lubricator has been applied to the motor, the fly wheel is now 22 inches in diameter, and it is further provided with fan blades designed to clear the body of the heated air, making the seat more comfortable in warm weather. The use of vanadium steel is confined to such fittings as the new sprocket



STAVER

mountings on the rear wheels, which are of lighter pattern than has been used before, to the spring shackles and other connecting parts of the carriage work which are likely to be subjected to severe loads.

Odd Cooling System of the Columbus.

One of the newcomers in the buggy field and one which appears entirely unannounced at this show, is the Columbus, which is a typical specimen of its class, chain driven, carefully built, and original in design. It has a two-cylinder, air-cooled motor, of 10 horsepower, placed on the right side of the vehicle under the seat, and driving the rear wheels independently through side chains. The change speed gearing is of the sliding pinion type, affording two forward speeds and the reverse, and is compactly mounted in close connection with the motor.

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A peculiar feature of the cooling system is the use of an outward-flow turbine construction for the fly wheel fan. The periphery of the wheel is pierced with a number of rectangular openings which form the outlets for a number of curved blades which conduct the heated air radially outward and deliver it at the rear of the motor compartment, a close-fitting pan under and around the front of the wheel serving to confine the induction to the space surrounding the cylinders. The wheels are 42 and 46 inches in diameter, shod with solid rubber tires; the wheel base is 80 inches, and the total vehicle weight is 800 pounds.

The Solidly Constructed Federal.

The Federal, which also is being shown for the very first time, embodies probably more solidity of construction than any other of the buggy machines. This is revealed most noticably in the case of the motor mounting, which consists of a cast iron bed plate, from the under side of which the crank case and cylinders are hung. This arrangement is in part necessitated by the type of transmission employed, which consists of an aluminum alloy disc, attached to the fly wheel and driving a fiber follower wheel which is mounted on a longitudinal shaft, communicating with the live rear axle through a veritable cardan shaft and enclosed bevel and differential group. The speed ratio is controlled by a side lever, the application of the driven against the driving discs being regulated by a pedal. A second pedal controls the contracting brake on the rear wheels. The vehicle has a heavy pressed steel frame wheel steering gear, full elliptic springs, and is mounted on annular ball bearings throughout. Its specifications are: Motor, 12 horsepower, opposed, air cooled, straight cylinder type; wheels, 35 inches diameter, shod with solid tires; wheel base, 76 inches; weight, 1,175 pounds.

Flexibility of the Chicago.

The new Chicago motor buggy possesses the somewhat unusual feature of extreme flexibility in its specifications, the object being to provide the purchaser with just the machine be requires without burdening him with any greater cost than is absolutely necessary. Thus while the cheapest arrangement listed comprises tiller steering gear, steel tires, and a plain, open box body, by the addition of solid rubber tires, wheel steering, a top and more complete equipment in other ways, the same vehicle in its essentials may be made to serve a far different purpose from what it is suited to accomplish in its most elementary set-up.

The principal specifications of the Chicago line are: Motor, opposed cylinder, air cooled type, rated at 10 horsepower; planetary change gear, pedal controlled; center chain drive to live rear axle; wheels, 38 inches diameter, shod with 1⅛-inch steel oval edged tires, or rubber tires as an extra option; wheel base, 65 inches; suspension by full elliptic end springs. On the two larger of the three models produced, a 12 horsepower, 4⅛ by 4¼ inch motor is employed, together with a slightly heavier equipment all around. The three styles of body supplied are known as the buggy, trap and surrey.

Reeves and Its Friction Development.

The high-wheeled runabout shown for the first time by the Reeves Pulley Co., while a complete and well designed vehicle in every respect, is introduced quite as much as a tangible demonstration of the possibilities of using the new Reeves motor buggy power plant in other machines of this description, as with the idea of making direct sales of the Reeves complete vehicle. The power plant is a new construction embodying an entirely novel development in the friction transmission line, and it is the intention of the makers to place it on the market for the use of carriage makers, rather than to confine themselves exclusively to the building of the complete rig, of which only a limited number will be produced.

The motor is of the opposed, air cooled type, placed in the center of the frame, has valves in the heads, worked by walking beam and push rod gearing, and is supported by a fore and aft cradle between two cross frame supports. The transmission is in complete duplicate. That is to say, the friction driving pulleys are doubled, one set driving each of the rear wheels through side chains, so that no differential gearing is required, and also in the event of a broken chain, or otherwise damaged driving mechanism, the vehicle will not necessarily be disabled. The friction surfaces are aluminum alloy and tarred paper.

The drive is obtained by moving the counter shaft in such a way that the two-step pulley which it carries on each of its disconnected ends, is brought into contact with a similar pulley on the crank shaft. The primary contact gives a low speed drive. For the high speed, the low speed pulleys on the motor shaft, are telescoped inside the high speed driving pulleys, so that the low speed driven pulleys will not make contact when the counter shaft is brought into place. The reverse is obtained by means of an idler, brought into contact between the normal driving and driven members.

Bugmobile with Controlled Differential.

Another vehicle which is designed quite as much for carriage builders as for direct sales of the complete vehicle, is the new Bugmobile, which is a substantial looking victoria carriage, with comfortable seat and full leather top. It has an unique system of transmission by individual chain from motor shaft to counter shaft, and special self-lubricating cable to the rear wheels. The selection of the two forward speeds is made by mean of a positive clutch locking one or the other of the two countershaft sprockets to its shaft. The reverse is secured by bringing the outside of a third chain, which runs from the crank shaft to an idle sprocket, into contact with a special sprocket on the counter shaft. The application of power to the rear wheels is secured by moving the rear axle a very slight distance fore and aft, and just sufficient to regulate the transmission system.

The most unique feature of the machine, however, is the use of a special form of controlled differential which is actuated by the steering gear. To this end a set of links control the position of the rear axle—subject, of course, to the fore and aft tensioning movement, already described—and so regulate it that whenever the front wheels are deflected in ither direction, the driving cable on what then becomes the inside wheel of the turn, is slacked sufficiently to release the wheel and permit it to rotate at whatever speed is demanded by the turn. The mechanism is so contrived that the clutching and differentiating actions may go on irrespective of one another. The Bugmobile is driven by an air cooled, opposed motor of 12 horsepower, has 40 and 44 inch wheels, shod with 1¼-inch solid tires, 74-inch wheel base, and Timken roller bearings on all four wheels.



HOLSMAN BUGGY TYPE COUPE

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The Commercial Vehicles at the Chicago Show



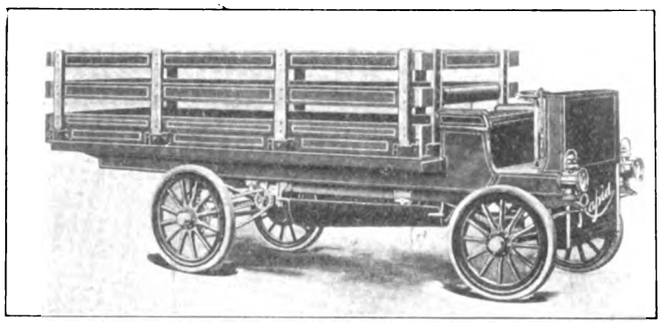
VIEW IN TATTERSALLS BEFORE FIRE DESTROYED THE DECORATIONS

As has already been indicated, the commercial section, while marking a new era in show history, and probably in the progress of the commercial vehicle in this country as well, is not distinguished by any degree of overcrowding. Visitors at all times have plenty of elbow room in the Seventh Regiment Armory—the old Tattersalls—while to the number of empty spaces which were unprovided for in the original allotments of stands, are added also at least three others, left vacant by the defection of proposed exhibitors. Happily the unfortunate incident on Tuesday morning was not of sufficient moment to close the doors for more than half a day in all, the resumption of business in the evening being at once a credit to the management, and revealing but slight loss to the show as a whole—despite the loss of the bunting sky.

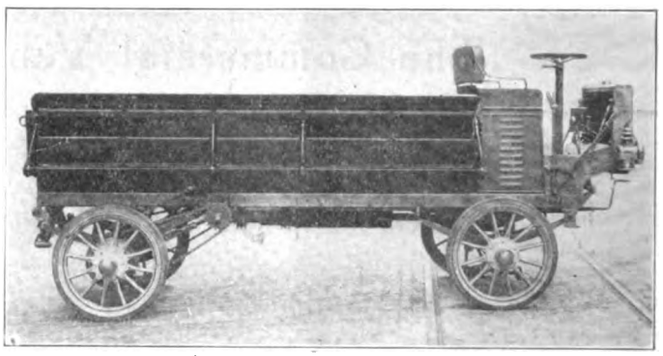
Of the score and more of makers showing commercial vehicles several have already exhibited in New York this year. Among such exhibits are the neat little one ton Franklin stake truck, with its air-cooled, vertical, four cylinder motor, concealed under the driver's seat, sliding gear transmission and worm drive; the Thomas taxicab and chassis, which attracted so much attention at the Garden because of the compact design of its block type motor; the exceedingly practical looking Brush delivery, with its unique construction throughout; and the Pope-Waverly electric delivery wagons and light stake truck. These stand out as conspicuous examples of the possibilities of light construction, coupled with a fair capacity for speed.

Among the heavier vehicles which already have made their bow to the show visitor, the massive electrics of the Studebaker line, together with the attractive hotel bus, which also drew attention in the Garden, are good examples of what may be done where heavier loads are to be carried. The Reliance trucks, which are distinguished by the interchangeable features of their two-cycle motors, are shown on the adjacent stand, and call attention to the fact that it is a practical impossibility to design a motor equipment for any vehicle such that it will respond invariably to the demands of commercial service. Across the hall, the large exhibit of Rapid vehicles, embody-

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RAPID TRUCK



RELIANCE TRUCK

ing a wide range of application of the motor car to the commercial field, and in eleven different styles, and also revealing a wide variety of uses for the two distinct chassis of 1½ and 1 ton capacity, respectively, is a valuable object lesson in itself.

For the purposes of the utility vehicle, friction drive is held to be especially suitable on account of its simplicity, since, apart from questions of its efficiency, it generally gives less trouble in the hands of careless or unskilled operators than any other type. It is typical of the growth of this feeling that no less than five of the makers staging in this part of the show boast this feature among others in their exhibits, the method of transmission being, in each case, essentially the distinctive element in the vehicle. It is further of importance to note that no two of these are alike in method of application, though the principle always remains the same.

Simple Control of the Meiselbach.

While the Meiselbach car has but one speed in either direction, its transmission is of substantial construction and not liable to get out of order. On a line shaft coupled direct to the engine crank shaft, are two bevelled tarred paper pinions, fitting on splines so as to be capable of movement into or out of engagement with two large grey iron beveled surfaces. The discs carrying these surfaces are keyed solid to two independent cross shafts so that they revolve in opposite directions when driven. They are backed up with ball bearings to take the thrust. To correct for their opposite direcion of travel, the motion of one of the cross shaft driven mebers is reversed through a pair of steel spur gears to a parallel sprocket shaft. The advantages of this arrangement are that there is no side strain on the drive shaft and the engaging friction surfaces having the same level, there is no cross slip between them, due to varying diameters of contact. There is a very slight slip, however, as no differential gear is provided and this is intended to provide for the different speeds of the drive wheels in rounding corners. The two chains are necessarily different lengths.

The control is very simple, the forward speed pinion being engaged by lever at the driver's seat. The reverse is operated by pedal, as are also the powerful band brakes on the periphery of the large friction discs. The motor is 28 horsepower. horizontal, double opposed, with a large fly wheel. A large force feed oiler located on top of the crank case furnishes the lubrication. The stripped chassis on view is of 1 ton capacity.

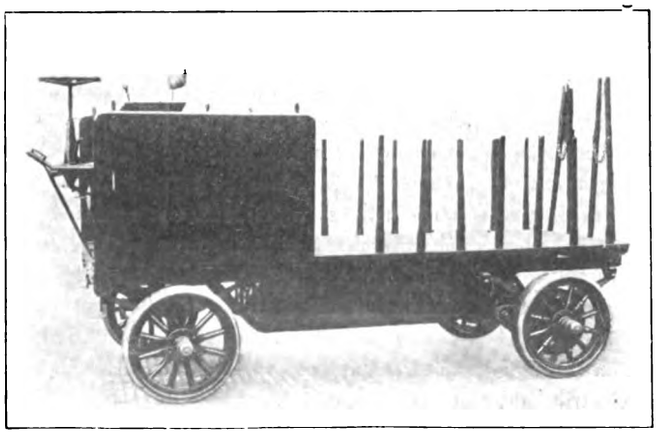
Worth with no Fly Wheel.

The Worth, another distinctive car, has a four-cylinder engine, of 5 by 6 inch bore and stroke. It has no fly wheel, the two large revolving disc members of the transmission acting as such. Between these two flat discs are two friction wheels, fiber rimmed and splined to shafts—directly coupled to the sprocket shafts through universal joints. When one wheel is engaged with the forward disc, the other is similarly engaged to the rear one.

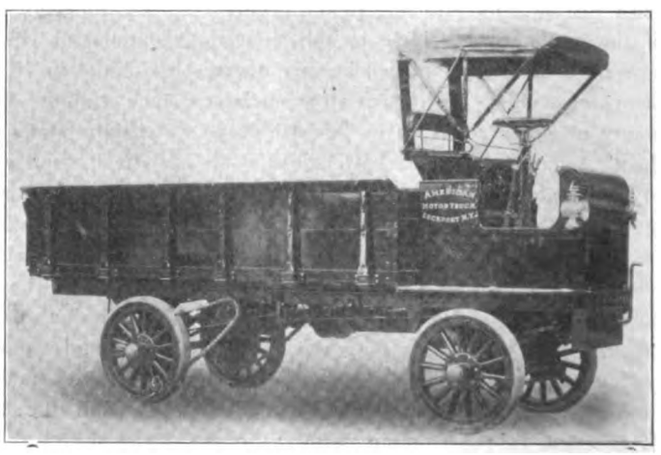
The driven wheels are thrown into or out of engagement with the discs by means of a lever at the driver's side, a motion of about two and one-half inches in this lever being sufficient to go from the forward to the reverse directions. The lever is held in place in the forward position by ratchet and pawl. The rear wheels are driven by large silent chains. Speed is varied by moving the two friction wheels toward or away from each other. This is done by two opposed racks with a pinion between operated by a hand wheel on the steering column. Large band brakes on the rear wheels are operated by a ratchet foot lever.

Unusual Form of Motor in the Weeks.

The Weeks system of transmission is somewhat similar to others of the same genral class in that there are two large friction discs keyed to the drive shaft with a pair of friction wheels operating between them. These wheels do not swing in the same way as any of the others. Instead, they are splined to the two sprocket shafts which in turn revolve in pivoted yokes. These yokes swing in a longitudinal plane bringing the wheels into engagement with either the forward or rear discs as desired.



STUDEBAKER TRUCK



AMERICAN TRUCK

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one wheel engaging one disc while the other wheel engages with the other disc. This plan has a tendency to slightly tighten or loosen the chain, but avoids the use of universal joints. Control of the gear is by two pedals, one for forward and one for reverse motion. The wheels are moved toward or away from the center of the discs by a hand lever to give the variable speed effect.

A novel and altogether unusual form of air-cooled two-cycle motor is found in this machine, which, as is claimed, is based on original patents of a revolutionary nature. The essence of its action depends upon a measure of internal as well as external cooling, which is effected by causing the gas to traverse a labyrinth in the under side of the piston as it is transferred from the crank case to the cylinder at the end of the exhaust. The mixed vapor and air, coming in contact with the heated surfaces of a number of baffling ribs cast in the piston, is merged into a complete gas and thoroughly mingled by agitation. A secondary effect of the system is that the heat absorbed in completing the vaporization of the charge in this way, is removed from the cylinder thus effecting a lowering in cylinder and piston temperatures, which results in a working cycle of unusual completeness chemically, and excellent mechanical results, as far as regularity of action, and throttle action are concerned. The cylinders are square externally, liberally provided with cooling flanges, and measure 4 inches, bore and stroke. The rated output is 20 horsepower.

Lambert Mechanism Well Protected.

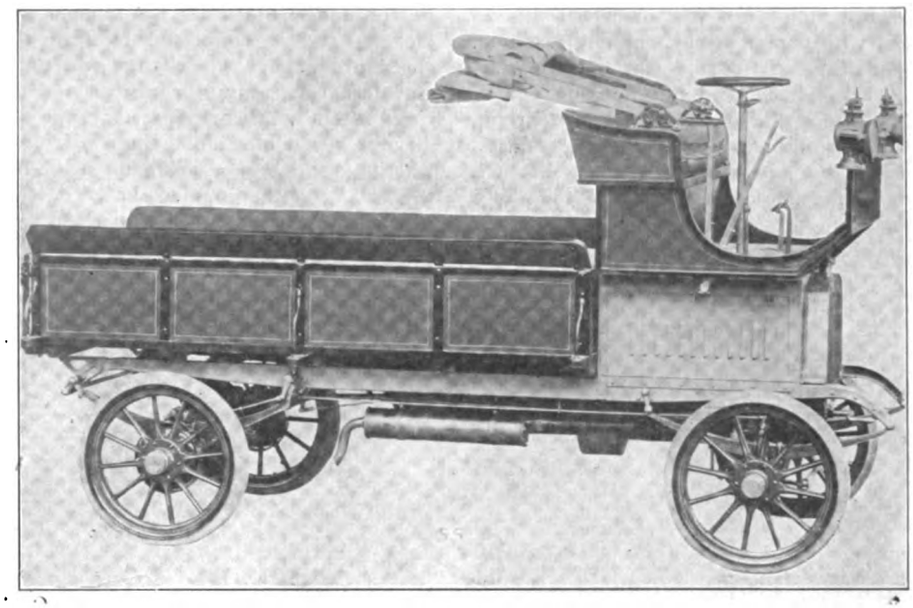
The type of friction gearing employed in the transmissions applied to the Lambert vehicles, already is familiar in its application to the pleasure vehicles produced by the same makers, and of unquestionable success. The same system in somewhat modified form, is employed in the massive newspaper delivery wagon staged just opposite the main entrance to the Armory. But two elements are employed in this device, namely a driving and a driven disc, the latter, mounted on a counter shaft, free to move endwise upon it, and securing its contact with the driver through the motion of the shaft toward or away from the motor which the driving disc serves in lieu of a fly wheel.

The vehicle in question is noteworthy in respect to its mounting on indestructible steel wheels, as well as for the use of the complete metal housing of the transmission by a metal under pan of rigid construction. Another feature which is of interest in its way also, is the use of a curved metal fender running across the front of the vehicle and serving at once as a buffer and guard for the tubular radiator. The motor, which is of the four-cylinder, vertical type, is completely housed under the foot board and driver's seat, the entire mechanism of propulsion of the vehicle thus being at once hidden from view and rendered as unobjectionable as possible, and protected from dust and dirt as well as liability to injury from external sources at the same time.

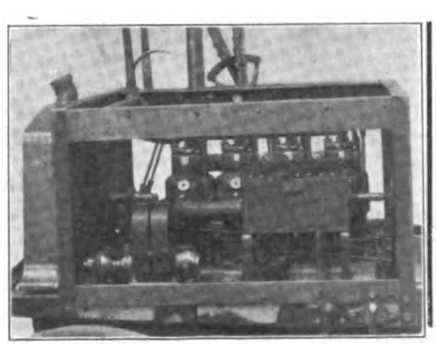
Worm Drive of the Mitchell.

One of the most salient features of the Mitchell truck is the worm drive, which affords a six-to-one reduction in speed, allowing a maximum speed of 15 miles an hour in the equipment displayed at the show, and gives an ideal smoothness and certainty of action in hard usage, such as can be obtained in no other way. The machine in question, which is of original and purely commercial design save for the motor, is rated at 1 ton capacity, is driven by a 20 horsepower, four-cylinder, vertical motor and has a sliding gearset, with straight line propeller shaft to the worm group on the live rear axle. The wheel base is 110 inches, and the wheels are 30 inches in diameter, shod with 3 and 3½ inch solid tires, front and rear.

A second machine on display, which is intended for delivery purposes and therefore requires greater speed capacity and flexibility of movement than the truck, is mounted on a chassis of more nearly conventional touring car form. It has its motor mounted in front of the driver's seat, under a regular hood, and carries a covered van body of neat and pleasing proportions.



MITCHELL TRUCK



MITCHELL POWER PLANT

Features of the American.

In connection with the subject of transmissions as applied to the commercial vehicles, it is safe to say that one of the most remarkable, because of its rarity on machines of the heavier order, is the planetary system found on the American, a massive 3 ton vehicle. The construction of this machine is extremely heavy in every point, this fact, coupled with the large size and powerful mounting of the gear housing, making it safe to assume that the interior parts of the spur planetary gear are equally beyond the limit of of any possible strain—that is to say, were such an assumption required in the face of the accomplished performances of these vehicles during the several years in which they have boasted this feature.

Another noteworthy point in the makeup of this truck is in the use of an auxilliary cooling surface and water storage space at the rear of the vehicle, in the shape of a flat coil of iron piping, laid below the floor level. Besides adding a positive assurance of ample cooling effect regardless of atmospheric or highway running conditions this addition, provides an extra 33¼ per cent. of water in the system, and safeguards the user against overheating through carelessness on the part of the driver in letting the supply run too low in the radiator.

The specifications include: Motor, four-cylinder vertical, with cylinders, 5 by 6 inches, bore and stroke, special design rendering it possible to dismount all vital parts without removing the motor from the frame or seriously dismantling it; rated output, 30-36 horsepower; double speed change

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gear, double chain transmission to rear wheels, heavy bearing surfaces throughout; wheel base, 118 inches, 36 inches diameter, tires, 4 and 5 inches, sidewire type.

Friction Transmission of the Plymouth.

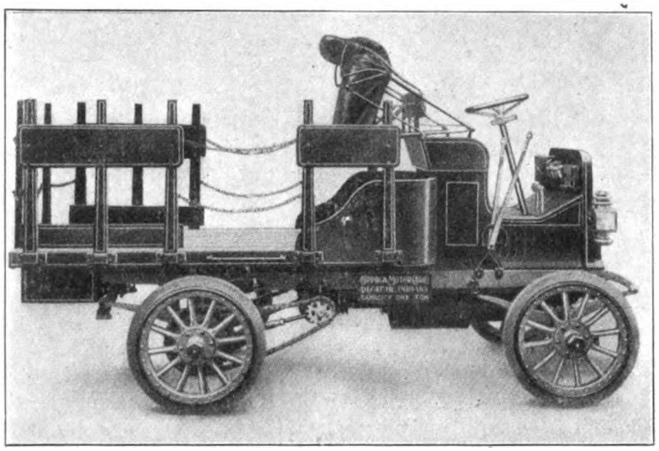
Still another type of four disc friction transmission is found in the case of the Plymouth trucks, in which the driving action is carried from the motor to a pair of aluminum alloy discs splined upon the driving shaft and free to slide upon it under the influence of one or the other of two pedals. Between them are a pair of driven sheaves, faced with papier mache, running fast upon a pair of co-axial counter shafts upon which they are splined, and thus making contact with one or the other of the two driving discs according to circumstances, and at a speed ratio determined by their distances from the centre of the discs. As they make contact upon opposite sides of the centre of the driving disc, they revolve in opposite directions, the required correction, necessary to establish uniform direction of motion in the two side chains which they drive, being thus secured by means of a secondary counter shaft on one side, driven from the main counter shaft by spur gears.

The advantage of this system is that no differential requirement exists, each side being driven by a complete and independent friction transmission, a secondary advantage being that the transmission will not necessarily be crippled by the breaking of a chain, or by the disabling of one entire side of the system for any reason. The forward and reverse directions of motion are obtained by drawing one or the other of the two driving discs into contact with the corresponding members on the counter shaft.

The Plymouth wagons are driven by a 40 horsepower, 4¾ by 5 inch four-cylinder, vertical motor placed low down in front under the seat. The wheels are 34 and 36 inches in diameter, front and rear, shod with single and twin solid tires, 4½ and 2½ plus 2½ inch in width, respectively. The emergency brakes expanding in drums on the rear wheels, are 16 inches in diameter and have 2½ inch width of face. The wheel base is 103 inches, and the weight of chassis, 3,800 pounds.

Coppock and Its Compact Power Plant.

The neat form of two-cycle motor employed in the Coppock truck serves to call attention to the general compact proportions of the power plant as revealed in 1 ton chassis, bared for inspection. The cylinder dimensions of this machine are 4½ by 5 inches, and its rated output is 20-24 horsepower. The motor is mounted vertically under the seat, has copper water jackets, and is connected to the three-speed, progressive type change gear through an internal expanding bronze master clutch ring, fitted with cork inserts. The final drive is by double side chain, a pair of contracting band brakes being mounted inside the frame on the counter shaft. A second pair of contracting brakes, operated by the side lever, are mounted on the rear wheels.



COPPOCK TRUCK

The wheel base is 87 inches, the wheels are shod with 32 by 3½ and 32 by 4 inch tires, front and rear, and the weight of the chassis is 2,900 pounds. The standard body is a stake platform with protecting apron at the front and sides of the carrying space, which 56 by 96 inches in floor dimensions.

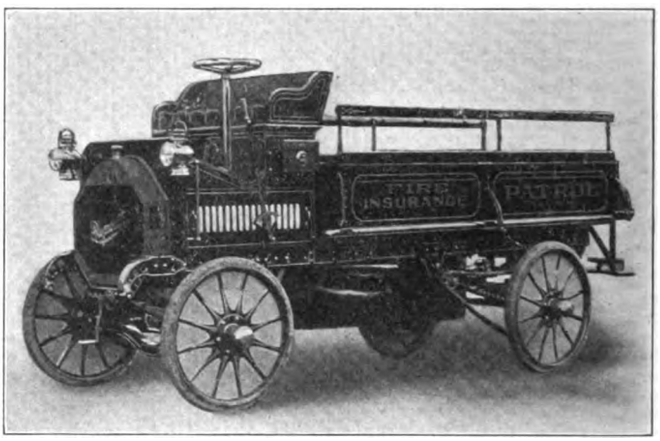
Interesting Points in Frayer-Miller.

Several points of interest are disclosed by a study of the characteristics of the Frayer-Miller trucks, among them being the use of a four-speed selective type sliding pinion change gear, thus permitting the use of a high-speed driving ratio considerably above that normally applied to vehicles of its class, and extremely useful where it is necessary to make long return trips without load. This feature is so worked out that with proper gearing of the side driving chains, it is possible to attain speeds of from 20 to 40 miles per hour when running light. The air-cooling of the motor is a feature of note in this, as in the pleasure cars produced under the same name. Another point which is brought out by the makers is the option offered the purchaser between high wheels shod with single tires, or low wheels shod with twin tires, each equipment being held to have its peculiar advantages under certain conditions of services.

The carrying capacity if the standard truck is 5,000 pounds. The motor output is rated at 24 horsepower. The wheels are mounted on Timken roller bearings, and the change gear on annular ball bearings.

Three Point Suspension of the Knox.

Another heavy type of vehicle, also distinguished by its air-cooling features, is the Knox, two examples of which are staged. The new 3 ton, four-cylinder truck, is driven by a 30 horsepower vertical motor, placed under the driver's seat, and driving through a three-speed, selective, sliding gearset, and double chains to the rear wheels. It has 111 inch wheel base, 36 inch wheels, shod with 4-inch solid rubber tires, and weighs 5,000 pounds. Rather an unusual feature of this



PLYMOUTH FIRE PATROL

machine, though common enough and well tried in pleasure car practice, is the use of three point suspension, both on motor and transmission supports. Another excellent feature of the power plant is the use of the continuous, flush-feed type of lubricating system. The oil receptacle is placed in the bottom of the crank case, and the feed is rendered positive and proportional to the speed of the engine by the use of a positively driven gear pump.

Safir, the Only Foreign Truck.

The only example of foreign vehicle construction on view, the Safir 4 ton truck, naturally attracts considerable attention. As a matter of fact, it boasts the most complete motor equipment in this part of the show, speaking from the engineering point of view, and is well worth study on that account alone. For example, the motor is equipped with a self-starting device, a compression breaking device affording something like 75 per cent. of the full power of the motor at corresponding speeds, an automatic jet carburetter, selective gearset, and other features such as ordinarily are dis-

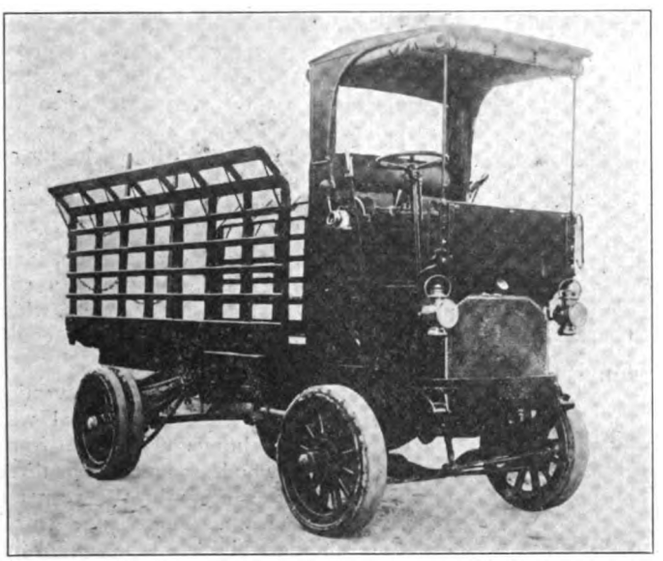
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coverable only on high grade and expensive cars.

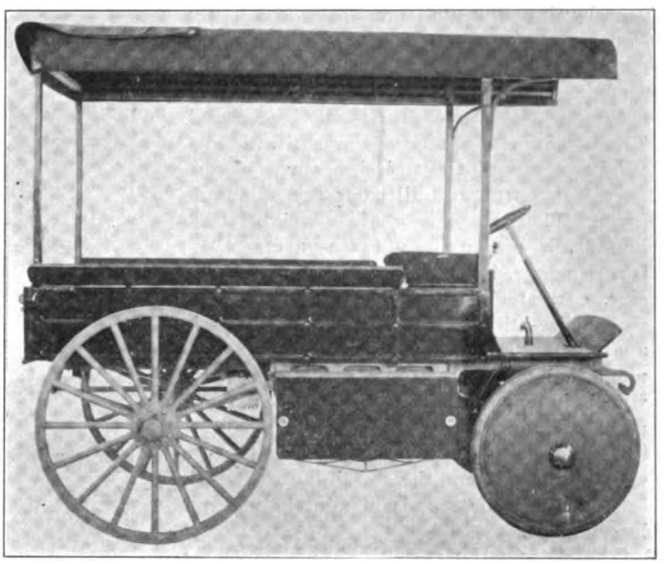
The starting gear comprises a small compressor actuated from the main driving shaft of the vehicle, and controlled by a multiple action lever which also may be made to admit a charge of air from the compression tank under the chassis to a special manifold mounted over the motor and connecting with the various cylinders through openings over the exhaust valves. At the centre of this manifold is a rotary distributing valve having four ports, and driven from the exhaust cam shaft in synchronism with the motor thereby admitting the charge of air from the manifold to the cylinder next in order of firing through one of several ports cored out of the manifold, and leading directly to the respective cylinders.

The braking system, which is absolutely unique, and has been in use for some little time by its makers in mountain work, both for trucks and passenger 'busses, consists of a method of advancing the exhaust cam shaft through 90 degrees, and simultaneously closing the throttle damper tightly at the carburetter, also opening communication through the intake manifold, to an extra discharge pipe leading back to the muffler. The action is entirely under the control of the throttle lever, which is mounted over the steering wheel, and is brought into play when that member is brought around through some 90 degrees of travel beyond the ordinary position of closed throttle. The effect of thus advancing the exhaust timing and connecting the intake pipe with the exhaust drum, is to convert the motor into a two-cycle air compressor. That is to say, with the throttle in the braking position, no gas is admitted to the cylinders, but instead, there are alternate compression and induction strokes, the release at the end of compression coming in each case, just about as the piston commences to descend. As a result of this, two pistons are continually rising against compression, and two falling under conditions of induction, either from the inlet or exhaust manifolds, and the relative power of the brake is dependent on the timing of the valves, which, in turn, depends on the position of the lever.

The motor is of 30 nominal horsepower; the wheel base is 153 inches; the complete vehicle weight is 5,500 pounds. The body is mounted on a number of cross mebers placed edgewise on the main frame, and is elevated to what is to the American eye, an awkward height, but one which, nevertheless, permits the body to clear the tops of the wheels, thus providing a clear load-carrying space of 11 feet by 6, floor area.



ONE OF THE MACK TRUCKS



COUPLE-GEAR ELECTRIC

Innovation on the Couple-Gear.

No little interest attaches to the unique system of motor drive applied to the Couple-Gear electric vehicles, its use being most significant as employed on the 5-ton truck with four-wheel drive, although the more novel application to the front wheels only of the new light delivery vehicle is calculated to attract almost as much attention, because of the consequent and unusual appearance of the vehicle in question.

The principle of the Couple-Gear system, embodies the use of a very compact form of electric motor, mounted within the enclosure of a double saucer disc driving wheel, with a pinion on either end of its armature shaft engaging one or two bevel gears mounted inside the wheel, but on opposite sides. The motor is fixed to the axle and kept from revolving, and by a special differential contrivance located in the armature shaft, the transmission losses are reduced to an extremely low minimum. The total rated motor output of the machine is 12 horsepower, the overload capacity being some 200 per cent.

In the case of the large machine, an innovation appears in the shape of a set of wood tires, which displace the solid side-wire dual rubber equipment employed hitherto. These tires consist of blocks of end wood placed over a bed of thick rubber packing material which surrounds the rim of the wheel, the blocks being held in place by the side compression of a pair of flanged locking rings which are bolted firmly in place. For this arrangement it is claimed that there is comparatively small material loss in resiliency at the slow speeds and heavy load factors employed; that they are cheap to build and inexpensive to repair; and furthermore, that such repairs may be made at any time and with slight outlay of labor upon materials always at hand. In substantiation of this, it is stated that when first applied the blocks are not specially dressed to an even surface, the effect of the road dirt and the load being sufficient to establish a good running surface within a short time.

Gifford-Pettit a New Comer.

An absolutely new structure, designed to withstand heavy loading and road stresses successfully, is found in the Gifford-Pettit, which is making its first public appearance at the show. It is of the heavier order of truck design, and is rated at 3 tons capacity. Among its special features may be mentioned the use of double ignition by jump spark and make and break, with Bosch magneto, both the commutator and ignitor timing being regulated simutaneously by the spark lever; the use of complete automatic lubrication in all parts of the vehicle there being no less than 11 oil feeds, taking care of all important bearings, including the diffuse bronze castings in the lower half of

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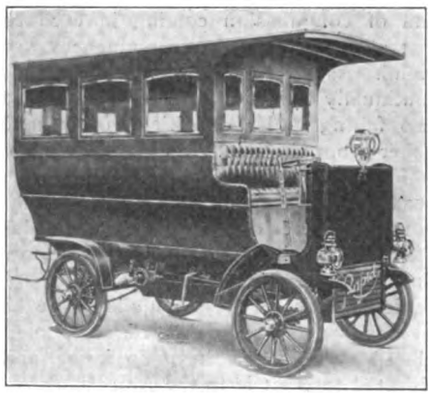
the gear case, the differential housing, and other important parts; and the use of very heavy internal-external brakes on the rear wheels.

The general specifications include: Motor, four-cylinder, vertical, water cooled, with cylinders 4¾ by 6 inches, rated output 30-35 horsepower; change gear, of the sliding pinion type, affording three forward speeds, with direct drive on the high, and the lay shaft idle; double chain drive; wheels and tires, 36 by 5 and 36 by 3½ inches, front and rear, respectively; wheel base, 120 inches; weight, 5,000 pounds, chassis alone; Timken axles and roller bearings throughout.

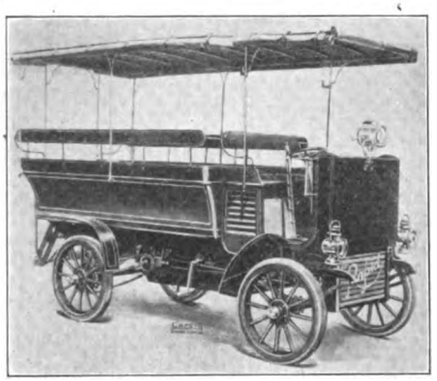
Pittsburg Electric Delivery Wagon.

Several exclusive and interesting features are developed in the construction of the Pittsburg electric delivery wagons, among them being, in the case of the 1,500 pound machine, a laudable attempt at interchangeability which has been most successful. There are no "rights" and "lefts" in the motor hangers and transmission parts, no unnecessary parts, and all parts are of simple form: The complete vehicle weighs 4,500 pounds, is mounted on three-quarter platform springs, both front and rear, has massive, cast steel I-beam axles, and armored wood sills—there being no separate chassis apart from the body. The electrical equipment includes two motors driving the rear wheels independently, a 42-cell battery of 11 plate cells, and 140 A. H. capacity. A Westinghouse controller, with positive reverse switch, is fitted, and the steering gear, which is of original design, is absolutely without lost motion.

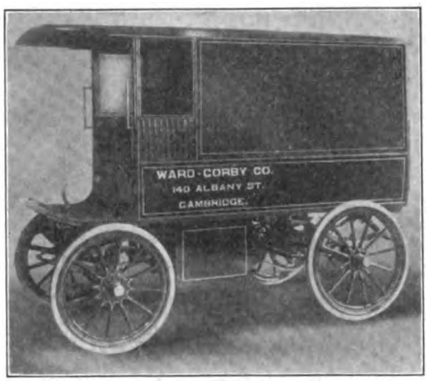
The characteristics of the 750-pound light delivery wagon also shown are: Single motor driving the live rear axle by Morse silent chain; no intermediate reduction; 22 cells of 140 A. H. battery, with a guaranteed radius of 40 miles on a charge at 10 miles per hour; total weight on wheels, 2,500 pounds. As in the larger car, no separate chassis formation is employed, it being held that a certain flexibility is secured with the built-in body construction, which is desirable as conducive to smooth



RAPID OPERA BUS



RAPID POLICE PATROL



PITTSBURGH ELECTRIC

load haulage and vehicle endurance. The additional weight of the chassis, its cost, and the stresses dut to its rigidity are used as arguments against its usefulness.

Points of the Sayers & Scoville.

Among the newcomers may be mentioned the Sayers & Scoville which displays a number of points worthy of note. Among those which contribute not a little to the serviceability of the machine may be mentioned the use of a special ignition system which is original and unique. The accumulator, a spare set of dry cells, and the four unit coils, are mounted in a special box at the right side of the vehicle, and all wiring led from it is firmly secured so that it cannot chafe or work itself loose from its terminal connections. The coils are so constructed that on slipping them into the case a brass post protruding from the rear end makes contact with the proper terminals. The vibrators are readily accessible when the door of the box is open, and the arrangement is such that only the closing of the door is required to hold the entire outfit in place, the batteries being electrically connected in the same fashion as the coils. The coils are of special construction, made to order, and are adapted for use in connection with the low tension magneto, which also forms a part of the electrical equipment.

The motor is of the four-cylinder vertical pattern, located in the conventional way, and is rated at 25 horsepower. The frame is of armored wood, mounted on three-quarter platform springs in the rear and semi-elliptics in front. The change gear is of the sliding pinion type, affording three forward speeds. It is mounted on annular ball bearings with Timken roller bearings to absorb the thrusts. There are two sets of brakes, one on the rear wheels and one on the counter shaft, two bands being located, one at either end, just inside the frame. The wheel base is 96 inches, the wheels are 32 and 34 inches in diameter, shod with 3½ inch solid tires, the weight is 2,600 pounds, and the capacity rating, 3,000 pounds.

New Things Among the Parts and Accessories Exhibits

In the field of parts and accessories it is evident that the two earlier New York shows by no means uncovered the whole gamut of the 1908 offerings, for in addition to the exhibits which already had appeared in the previous shows of the season, a number of new things are disclosed by concerns that were not represented at the other function. How many uncatalogued exhibitors there are probably never will be known. The raising of the ban on subletting of space brought in a flood of small specialties; each day one or more of the modest makers of such devices rented a corner of some stand and made their bids for business.

Naturally the well known exhibitors that appeared at New York made a brave showing at Chicago, as well, and consequently the visitor finds nearly all of the sundries and accessories that he is familiar with by reputation, such as Solar lamps, Jones speedometers, Truffault-Hartford shock absorbers, Sta-Rite plugs, Index speed indicators, Harroun bumpers and the like. All of the popular tires are represented, including Diamond, Hartford, Ajax, Continental, G & J, Morgan & Wright, Firestone, Empire and Michelin. The ignition concerns are strong in numbers, prominent among the displays being the products of the Witherbee Igniter Co., the Splitdorf Labratory, the Connecticut Telephone and Electric Co., the Remy Electric Co., the Heinze Electric Co., and the Pittsfield Spark Coil Co. Exhibits of special interest to the makers of cars are also numerous, and the manufacturer or designer finds a great assortment of component parts for review in the exhibits of such concerns as the Timken Roller Bearing Axle Co., the Whitney Mfg. Co., the Midgley Mfg. Co., the Standard

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Roller Bearing Co., the Baldwin Chain and Mfg. Co., the Kinsey Mfg. Co., the Briscoe Mfg. Co. and the Diamond Chain and Mfg. Co.

About the only novelty in motor design is the "Teg" two-cycle, two cylinder engine, made by the Lange-Smith Motor Co., of Chicago, which is of interest because of the claims for internal cooling that are made for it. Flanges or ribs on the lower part of the piston form a maze through which the compressed vapor mixture must pass on its way up through the piston port into the explosion chamber above the piston head. This has the double effect of cooling the piston by its contact with the mixed gasolene vapor and air, and of correspondingly warming the mixture so thoroughly as to effect complete vaporization of whatever gasolene mist or spray it may contain and preparing it for more ready and complete combustion. The cool piston inside assists the air flanges on the outside of the motor in keeping the cylinder walls from overheating. The engine is very similar to the motor used on the Weeks commercial car shown in Tattersalls, and the makers of the latter claim that the design was "borrowed" from them by a former employe.

Among the vast array of standard supplies and sundries, the Excelsior Supply Co., of Chicago, shows the Echo horn, an exhaust operated alarm having three tubes and a tri-tone chime; the Mandeville steering wheel muff, which protects the driver's hands on the steering wheel; the Universal tire protector or blow-out patch; the "Inner Shoe" for rebuilding the inside of tire casings; samples of "Triumph" grease, the special product of the Perfection Grease Co., South Bend, Ind., for automobile use; a liquid compound for cleaning cylinders of carbon, called "Carbonit"; Parks plugging specialties and rubber cement for tires; and the "Jef" valve grinding tool which operates with a crank.

In tires a radically new product is presented by the Zeglen Bullet-Proof Cloth Co., of Chicago, in clinchers in which the Zeglen fabric of silk strands is used instead of the more usual canvas. Whether this fabric would successfully prevent bullets from penetrating the tires if the latter were shot at is not made clear, but the user is given assurances that it will prevent puncture or bursting, with no sacrifice of resiliency.

An improved model of the Warner friction clutch is put on view by the Warner Clutch Co., of Chicago, and W. B. Murray, of Chicago, shows several forms of planetary gear. In the parts class the Atlas Mfg. Co., of Fostoria, O., is also conspicuous as a newcomer, with specimens of crankshaft work in which specially accurate grinding is a feature. McCord & Co., of Chicago, already well known through their established lines of force feed lubricators, their radiators, gaskets and the like, show for the first time the new McCord carburetter, which is of the "puddle" type, and a new low tension magneto. The latter, which is of very original design, is particularly suited to use on small cars. The De Souchet Motor Appliance Co., Chicago, displayed a self-starting device of some originality.

With a name based on the characteristics of the product, the Triple Action Spring Co., of Chicago, exhibits compound springs, a fact which is in itself rather out of the ordinary since the makers of semi and full elliptic leaf springs and the makers of the so-called supplementary spiral springs have heretofore been widely separated. The springs shown not only combine the usual flat springs with the spiral supplementaries, but introduce between the two a yielding spring scroll, which opens under shock stress. Road jars are taken up first by the spiral, then by the scroll, and if sufficiently severe, lastly by the flat spring. Ingenious shackles for preventing side play are provided. The springs are made up in a variety of combinations, the list including three-quarter platform springs, full elliptics and semi-elliptics.

Blue blazes, which in the vocabulary of earlier days were synonymous with extreme intensity, flash alarmingly at the exhibit of the Pfanstiehl Electrical Laboratory, Chicago, where is installed what the exhibitors assert is the largest automobile ignition coil unit ever constructed. Regular 110 volt direct current, such as is used for lighting, is employed in what corresponds with the battery circuit on a small coil, and the resulting secondary or high tension current has the qualities of real lightning. The object of the coil monster is to show the "caterpillar" flame which in a smaller way the company's coils give in automobile service. The concern, whose plant is at North Chicago, Ill., also makes other electrical specialties, which are on display.

Wind shields with wood and brass frames constitute the display of Cartier, Chapman & Co., of Ludington, Mich., in their first show appearance for the season, and Eugene Arnstein, the Chicago jobber, features in his extensive line of sundries a new, round, double generator at a moderate price and the H. P. spark plug. The Imperial Brass Co., of Chicago, makes its 1908 showing of pumps, robe rails and general automobile brass fittings, while the Long Mfg. Co., of Chicago, indicates that for the coming year it will stick to the designs which in the past have proved so satisfactory in its radiators. Tops constitute the specialty of the Longdin-Brugger Co., of Fon du Lac, Wis., and three specimens of the company's work are on view.

"Five cars in one" are shown by the C. H. Stratton Carriage Co., of Muncie, Ind., to be a possibility by the use of a remarkable body and top arrangement which by dropping and folding into various combinations gives the chassis on which it is mounted the effect of anything from a runabout or two passenger coupe to a big limousine or a Pullman sleeping car. In convertibility it excels the wonders of the combination folding bed, refrigerator, cook stove, and bookcase, which is supposed to make life pleasant for Harlem flat dwellers.

Vivax accumulators in different sizes make up the exhibit of the Vivax Storage Battery Co., of Chicago, and the Never-Miss Spark Plug Co., of Lansing, Mich., stages volt-meters, ampere-meters, volt-ammeters, Never-Miss spark plugs and a handy chain repair device. In addition to a general line of automobile sundries the Central Rubber Co., of Chicago, offers a very complete line of rubber goods specialties such as automobile rain coats, washers' aprons, top material, tire jackets, collapsible water buckets and tire repair materials. Rare gums and pigments such as are used in the manufacture of their colors and varnishes are available for examination at the space of the Standard Varnish Works, of Chicago, together with specimens of their work.

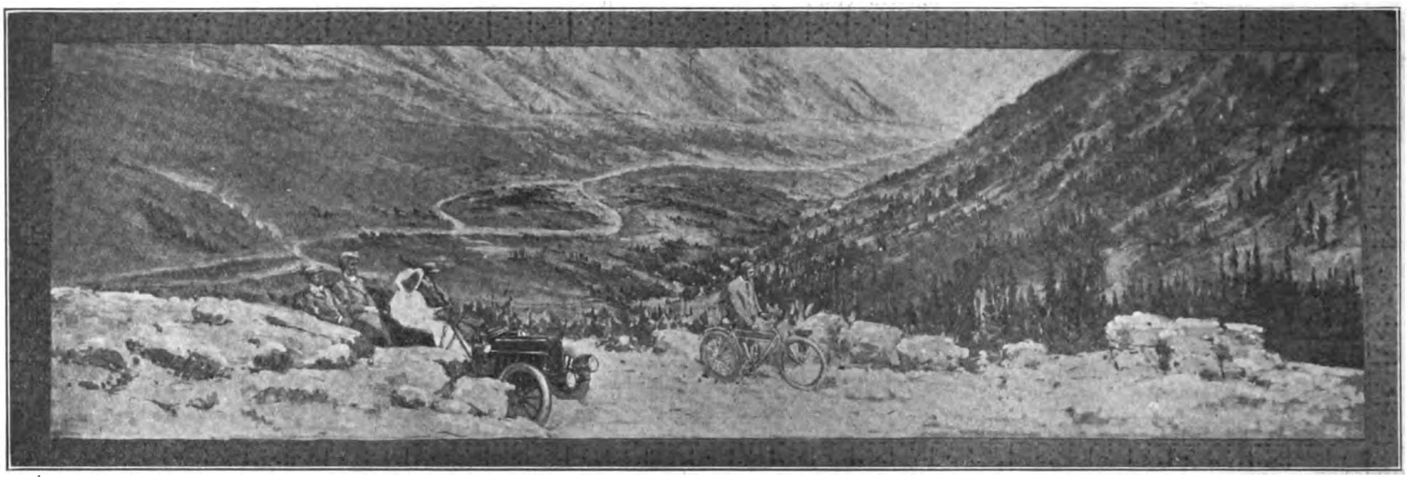
In coil construction a more or less novel design is exhibited by the Duplex Coil Co., of Fond-du Lac, Wis. The core of the coil is bent to a horseshoe or U shape so that the magnetic force of both ends of the core operates on the vibrator instead of the force from only one end. The windings around the core are arranged on the two vertical arms, in two divisions, so that externally they look like the windings on an electric bell or a telegraph instrument. The doubling of the magnetic force on the vibrator is said to permit the use of a stronger return spring and to give a consequent positivity of action.

Accumulators constitute the principal feature at the stands of the General Accumulator & Battery Co., of Milwaukee, and the Commercial Battery Co., of Chicago. The former company makes the Radium batteries and charge indicators and the latter manufactures the Combat igniter and a combination dynamo and accumulator outfit with automatic cut-off. The Hill precision oiler in its latest form, exhibited by the Precision Appliance Co., of Chicago, and the mechanical oilers of Edward Neely & Co., Chicago, are on view as solutions to the lubricating problem, and the Webster exhaust muffler, made by the Webster Muffler Co., of Galesburg, Ill., promises no back pressure and no noise. This muffler is exhibited by J. H. Baird, of Galesburg, and is quite novel. The exhaust is first broken up by a sieve-like cone, and then sifts out between flat rings composing the outer wall. A closing head at each end binds the rings together under spring tension, while a hand lever spreads the rings when desired, for "cutting out."

Heitger carburetters are explained to the visitor at the space of the Heitger Carburetter Co., of Indianapolis. Malleable steel castings, drop forgings and gray iron castings are shown by the Western Malleable Steel Co., of Detroit, Mich.

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Summary of Exhibits at the Chicago Show



A SELECTION FROM THE COLISEUM "ART GALLERY"

Pleasure Vehicles.

Packard Motor Car Co., Detroit, Mich.—Packard gasolene cars.

Locomobile Company of America, Bridgeport, Conn.—Locomobile gasolene cars.

Wayne Automobile Co., Detroit, Mich.—Wayne gasolene cars.

Electric Vehicle Co., Hartford, Conn.—Columbia gasolene and electric cars.

Knox Automobile Co., Springfield, Mass.—Knox gasolene cars.

Woods Motor Vehicle Co., Chicago, Ill.—Woods electric cars.

Reo Motor Co., Lansing, Mich.—Reo gasolene cars.

Studebaker Automobile Co., South Bend, Ind.—Studebaker gasolene and electric cars.

E. R. Thomas Motor Co., Buffalo, N. Y.—Thomas gasolene cars.

F. B. Stearns Co., Cleveland, O.—Stearns gasolene cars.

Apperson Bros. Auto Co., Kokomo, Ind.—Apperson gasolene cars.

Northern Motor Car Co., Detroit, Mich.—Northern gasolene cars.

Elmore Mfg. Co., Clyde, O.—Elmore gasolene cars.

Olds Motor Works, Lansing, Mich.—Oldsmobile gasolene cars.

Lozier Motor Co., New York—Lozier gasolene cars.

Dayton Motor Car Co., Dayton, O.—Stoddard-Dayton gasolene gars.

Pope Motor Car Co., Toledo, O—Pope-Toledo gasolene cars.

Pope Mfg. Co., Hartford, Conn.—Pope-Hartford gasolene cars.

H. H. Franklin Mfg. Co., Syracuse, N. Y.—Franklin gasolene cars.

Bartholomew Co., Peoria, Ill.—Glide gasolene cars.

Waltham Mfg. Co., Waltham, Mass.—Waltham-Orient gasolene cars.

Premier Motor Mfg. Co., Indianapolis, Ind.—Premier gasolene cars.

Matheson Motor Car Co., Wilkesbarre, Pa.—Matheson gasolene cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y.—Maxwell gasolene cars.

Geo. N. Pierce Co., Buffalo, N. Y.—Pierce Great Arrow gasolene cars.

White Company, Cleveland, O.—White steam cars.

Stevens-Duryea Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene cars.

Haynes Automobile Company, Kokomo, Ind.—Haynes gasolene cars.

Winton Motor Carriage Co., Cleveland, O.—Winton gasolene cars.

Royal Motor Car Co., Cleveland, O.—Royal Tourist gasolene cars.

Thomas B. Jeffery & Co., Kenosha, Wis.—Rambler gasolene cars.

National Motor Vehicle Co., Indianapolis, Ind.—National gasolene cars.

Babcock Electric Carriage Co., Buffalo, N. Y.—Babcock electric cars.

Mitchell Motor Car Co., Racine, Wis.—Mitchell gasolene cars.

Pungs-Finch Auto & Gas Engine Co., Detroit, Mich.—Pungs-Finch gasolene cars.

Autocar Co., Ardmore, Pa.—Autocar gasolene cars.

Dragon Automobile Co., Philadelphia, Pa.—Dragon gasolene cars.

Baker Motor Vehicle Co., Cleveland, O.—Baker electric cars.

Cadillac Motor Car Co., Detroit, Mich.—Cadillac gasolene cars.

Peerless Motor Car Co., Cleveland, O.—Peerless gasolene cars.

Imperial Motor Car Co., Williamsport, Pa.—Second Imperial gasolene cars.

Welch Motor Car Co., Pontiac, Mich.—Welch gasolene cars.

Peerless Motor Car Co., Cleveland, O.—Peerless gasolene cars.

Corbin Motor Vehicle Corp., New Britain, Conn.—Corbin gasolene cars.

Buckeye Mfg. Co., Anderson, Ind.—Lambert gasolene cars.

Columbus Buggy Co., Columbus, O.—Columbus electric cars.

Nordyke & Marmon Co., Indianapolis, Ind.—Marmon gasolene cars.

American Locomotive Auto Co., New York.—American Berliet gasolene cars.

Rauch & Lang Carriage Co., Cleveland, O.—R & L. electric cars.

Aerocar Motor Co., Detroit, Mich.—Aerocar gasolene cars.

Gearless Transmission Co., Rochester, N. Y.—Gearless gasolene cars.

Moon Motor Car Co., St. Louis, Mo.—Moon gasolene cars.

Pierce Engine Co., Racine, Wis.—Pierce-Racine gasolene cars.

Tincher Motor Car Co., South Bend, Ind.—Tincher gasolene cars.

Austin Automobile Co., Grand Rapids, Mich.—Austin gasolene cars.

De Luxe Motor Car Co., Detroit, Mich.—De Luxe gasolene cars.

Jackson Automobile Co., Jackson, Mich.—Jackson gasolene cars.

American Motor Car Co., Indianapolis, Ind.—American gasolene cars.

Chicago Coach & Carriage Co., Chicago, Ill.—Duer gasolene buggies.

Staver Carriage Co., Chicago.—Staver gasolene buggies.

Oscar Lear Automobile Co., Springfield, O.—Frayer-Miller gasolene cars.

Pontiac gasolene buggies.

Pontiac gasolent buggies.

Streator Motor Car Co., Streator, Ill.—Streator gasolene cars.

Brush Runabout Co., Detroit, Mich.—Brush gasolene runabouts.

Colt Runabout Co., New York—Colt gasolene runabouts.

W. C. Price, Harvey, Ill.—Price gasolene runabout.

Mason Car Sales Co., Kansas City, Mo.—Mason gasolene cars.

Western Automobile Works, Chicago, Ill.—Western gasolene cars.

Perfection Automobile Works, South Bend, Ind.—Perfection gasolene cars.

Buick Motor Co., Jackson, Mich.—Buick gasolene cars.

Reeves Pulley Co., Columbus, Ind.—Reeves gasolene buggies.

Rockford Auto & Engine Co., Rockford, Ill.—Federal gasolene buggies.

Byrider Electric Auto Co., Cleveland, O.—Byrider electrics.

Black Mfg. Co., Chicago—Chicago gasolene buggies.

Acme Motor Car Co., Reading, Pa.—Acme gasolene cars.

Monarch Motor Car Co., Chicago Heights, Ill.—Monarch gasolene cars.

Moline Automobile Co., East Moline, Ill.—Moline gasolene cars.

Auburn Automobile Co., Auburn, Ind.—Auburn gasolene cars.

Diamond T. Auto Co., Chicago.—Diamond T. gasolene cars.

Holsman Automobile Co., Chicago.—Holsman gasolene cars.

Wayne Works, Richmond, Ind.—Richmond gasolene cars.

Rainier Company, New York—Rainier gasolene cars.

Kissell Motor Car Co., Hartford, Wis.—Kissellkar gasolene cars.

Smith Automobile Company, Topeka, Kan.—Great Smith gasolene cars.

Bugmobile Co. of America, Chicago.—Gasolene buggies.

Chicago School of Motoring, Chicago.

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Lauth-Juergens Motor Car Co. Chicago—Lauth-Juergens gasolene cars.
Schacht Mfg. Co., Cincinnati, O.—Schacht gasolene buggies.
Reliable Dayton Motor Car Co., Chicago.—Reliable Dayton gasolene cars.
Aurora Motor Works, Aurora, Ill.—Aurora gasolene cars.
Lorraine Automobile Mfg. Co., Chicago.—Lorraine gasolene cars.
Pullman Motor Car Co., Chicago.—Pullman gasolene cars.
Gaeth Automobile Works, Cleveland, O.—Gaeth gasolene cars.
Hatfield Motor Vehicle Co., Miamisburg, O.—Hatfield gasolene cars.
Atlas Motor Car Co., Springfield, Mass.—Atlas gasolene cars.
C. V. I. Motor Car Co., Jackson, Mich.—C. V. I. gasolene cars.
Oakland Motor Car Co., Pontiac, Mich.—Oakland gasolene cars.

Commercial Vehicles.

H. H. Franklin Mfg. Co., Syracuse, N. Y.
American Motor Truck Co., Lockport, N. Y.
Safir Automobile Co., Zurich, Switzerland.
Buckeye Mfg. Co., Anderson, Ind.
Rapid Motor Vehicle Co., Pontiac, Mich.
Commercial Motor Truck Co., Plymouth, Ohio.
Sayers & Scovill, Cincinnati, O.
Continental Motor Car Co., Chicago.
Coppock Motor Car Co., Marion, Ind.
Reliance Motor Car Co., Detroit, Mich.
Gifford-Pettit Mfg. Co., Chicago.
Oscar Lear Automobile Co., Springfield, Ohio.
Studebaker Automobile Co., South Bend, Ind.
Pope Motor Car Co., Indianapolis, Ind.
Pittsburg Motor Vehicle Co., New York.
Mitchell Motor Car Co., Racine Wis.
Couple Gear Freight Wheel Co., Grand Rapids, Mich.
Knox Automobile Co., Springfield, Mass.
Worth Motor Car Mfg. Co., Evansville, Ind.
E. R. Thomas Motor Co., Buffalo, N. Y.
A. D. Meiselbach Motor Wagon Co., North Milwaukee, Wis.

Accessories.

K. W. Ignition Co., Cleveland, O.—K-W magnetos, master vibrators, plugs and ignition system.
C. A. Shaler Co., Waupun, Wis.—Electric vulcanizers.
C. H. Stratton Carriage Co., Pontiac, Mich.—Folding bodies.
Norton Company, Worcester, Mass.—Carborundum grinder and emery supplies.
Randall-Faichney Co., Boston, Mass.—Grease pumps and primers.
Auto Goods Co., Boston, Mass.—Supplies.
T. Alton Bemus, Boston, Mass.—Ignition timers.
American Aluminum Coating Co., Pittsbug, Pa.—Aluminum coated steels.
Vehicle Top & Supply Co., St. Louis, Mo.—Tops and supplies.
Roger B. McMullen, Chicago—Frames, axles and parts.
Automobile Topics, New York City.
Jeffery-Dewitt Co., Newark, N. J.—Spark plugs.
Warner Clutch Co., Chicago.—Clutches.
Triple Action Spring Co., Chicago.—Springs.
Duplex Coil Co., Fond du Lac, Wis.—Coils.
Longdin-Brugger Co., Fond du Lac, Wis.—Bodies.
Pfanstiehl Electrical Laboratory, No. Chicago, Ill.—Ignition specialties.
Chicago Wind Shield Co., Chicago.—Wind shields.
Vivax Storage Battery Co., Chicago.—Batteries.
Kinsey Mfg. Co., Dayton, O.—Kinwood automobile parts.
Sprague Umbrella Co., Norwalk, O.—Tops and wind shields.
Never-Miss Spark Plug Co., Lansing, Mich.—Spark plugs.
Adam Cook's Sons, New York.—Albany grease.
Indestructible Steel Wheel Co., Chicago.—Steel wheels.
Imperial Brass Mfg. Co., Chicago.—Specialties.
Republic Rubber Co., Youngstown, O.—Tires.
Prest-O-Lite Co., Indianapolis, Ind.—Gas tanks and tire inflators.
Valentine & Co., Chicago.—Varnishes.
Electric Storage Battery Co., Philadelphia, Pa.—Accumulators.
McCord & Co., Chicago—Lubricators, carburetters, magnetos, etc.
Auto Improvement Co., New York.—Self-starters and specialties.
Aurora Automatic Machinery Co., Aurora, Ill.—Thor motors and components.
Pennsylvania Rubber Co., Jeannette, Pa.—Tires.
Hartford Suspension Co., New York.—Hartford-Truffault shock absorbers.
Wm. Cramp & Sons' Ship & Engine Bldg Co., Philadelphia, Pa.—Bronze castings and automobile parts.
R. H. Smith Mfg. Co., Springfield, Mass.—Springfield motometers.
Chicago Battery Co., Chicago.—Batteries.
Whitney Mfg. Co., Hartford, Conn.—Whitney chains and keying system.
Motsinger Device Mfg. Co., Pendleton, Ind.—Motsinger automobile sparker.
Wheeler & Schebler, Indianapolis, Ind.—Schebler carburetters.
Morgan & Wright, Detroit, Mich—Morgan & Wright tires.
R. E. Dietz Co., New York.—Lamps.
Dayton Electrical Mfg. Co., Dayton, O.—Igniters and ignition specialties.
Hartford Rubber Works Co., Hartford, Conn.—Hartford tires.
Timken Roller Bearing Axle Co., Canton, O.—Bearings and axles.
Diamond Rubber Co., Akron, O.—Diamond tires.
Brown-Lipe Gear Co., Syracuse, N. Y.—Transmissions, differentials and steering gear
Spicer Universal Joint Mfg. Co., Plainfield, N. J.—Universal joints.
G & J Tire Co., Indianapolis, Ind.—G & J tires.
Badger Brass Mfg. Co., Kenosha, Wis.—Solar lamps and acetylene generators.
Veeder Mfg. Co., Hartford, Conn.—Odometers and speed indicators.
Gray & Davis, Amesbury, Mass.—Lamps.
A. W. Harris Oil Co., Providence, R. I.—Lubricants.
National Carbon Co., Cleveland, O.—Batteries.
Rose Mfg. Co., Philadelphia, Pa.—Lamps.
B. F. Goodrich Co., Akron, O.—Tires
C. F. Splitdorf, New York.—Timers, distributors, coils and ignition specialties.
Hyatt Roller Bearing Co., Harrison, N. J.—Roller bearings.
Shelby Steel Tube Co., Pittsburg, Pa.—Tubing.
Long Mfg. Co., Chicago.—Radiators.
Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires.
Diamond Chain & Mfg. Co., Indianapolis, Ind.—Diamond chains.
Ideal Carriage Washer Co., Rochester, N. Y.—Cleaning sponges.
Lang-Smith Motor Co., Chicago—Tee two-cycle motors.
Commercial Battery Co., Chicago—Battery.
De Souchet Motor Appliance Co., Chicago—Self-starting device.
General Accumulator & Battery Co., Milwaukee, Wis.—Batteries.
Millwood Mfg. Co., Chicago, Ill.—Specialties.
Zeglen Auto Tire Co., Chicago—Tires.
Milwaukee Motor Co., Milwaukee, Wis.—Motors.
Rund Mfg. Co., Pittsburg, Pa.—Specialties.
Zoar Battery Co., Cleveland, O.—Batteries.
Webster Muffler Co., Galesburg, Ill.—Mufflers.
Turner Brass Works, Sycamore, Ill.—Bumpers and specialties.
Nelson Wheel Co., Chicago.—Spring wheels.
Jos W. Jones, New York.—Jones speedometers, annunciators, odometers, etc.
Warner Gear Co., Muncie, Ind.—Gears and parts.
Ajax-Grieb Rubber Co., New York.—Ajax automobile tires.
Goodyear Tire & Rubber Co., Akron, O.—Goodyear tires.
Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin chains and recoil check.
Pantasote Co., New York.—Top and upholstering material.
Warner Instrument Co., Beloit, Wis.—Warner Auto-meters.
Swinehart Clincher Tire & Rubber Co., Akron, O.—Tires.
N. Y. & N. J. Lubricant Co., New York.—Lubricants.
Remy Electric Co., Anderson, Ind.—Magnetos.
Firestone Tire & Rubber Co., Akron, O.—Firestone tires.
Motor & Accessories Mfrs., Inc.
Cook's Standard Tool Co., Kalamazoo, Mich.—Jacks.
Oliver Mfg. Co., Chicago.—Jacks and accessories.
S. F. Bowser & Co., Inc., Fort Wayne, Ind.—Gasolene and oil storage outfits.
Edmunds & Jones Mfg. Co., Detroit, Mich.—Lamps and specialties.
Byrne, Kingston & Co., Kokomo, Ind.—Kingston Carburetters.
Kokomo Electric Co., Kokomo, Ind.—Ignition specialties.
Weed Chain Tire Grip Co., New York.—Non-skid chains.
Hancock Mfg. Co., Charlotte, Mich.—Oilers, tank gauges and fittings.
Leather Tire Goods Co., Newton Upper Falls, Mass.—Non-skid covers and leather inner tubes.
Hotchkin Mfg. Co., Chicago.—Anti-jolt device.
Auto Accessories Mfg. Co., Detroit, Mich.—Tops, tire jackets and accessories.
Duff Mfg. Co., Allegheny, Pa.—Barrett jacks.
Western Malleable Steel Co., Detroit, Mich.—Steel castings and forgings.
Midgley Mfg. Co., Columbus, O.—Midgley rims and wheels.
R. E. Hardy Co., New York.—Sta-Rite spark plugs and ignition specialties.
Jos. Dixon Crucible Co., Chicago.—Graphite lubricants.
Stewart & Clark Mfg. Co., Chicago.—Speed indicators.
Atwater-Kent Mfg. Works, Philadelphia, Pa.—Igniters and timers.
Elite Mfg. Co., Ashland, O.—Jacks and pumps.
Empire Auto Tire Co., Trenton, N. J.—Empire tires.
Ross Gear & Tool Co., Lafayette, Ind.—Gears.
J. H. Sager Co., Rochester, N. Y.—Supplementary springs.

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Hoffecker Co., Boston, Mass.—Speed indicators.
C. Cowles & Co., New Haven, Conn.—Lamps.
Breeze Carburetter Co.—Breeze carburetters.
Auto Pump Co., Springville, N. Y.—Pumps and specialties.
Gray--Hawley Mfg. Co., Detroit, Mich.—Chime whistles and cutout mufflers.
Lipman Mfg. Co., Beloit, Wis.—Speed indicators, gasolene gauges and odometers
National Battery Co., Buffalo, N. Y. Batteries.
Michelin Tire Co., Milltown, N. ? . Michelin tires.
Gemmer Mfg. Co., Detroit, Mich.—Steering gears and parts.
Briscoe Mfg. Co., Detroit, Mich.—Hoods, tanks, radiators, etc.
Heinze Electric Co., Lowell, Mass.—Coils and ignition equipment.
Wm. C. Robinson & Son Co., Baltimore, Md.—Greases and lubricants.
Oliver Instrument Co., Minneapolis, Minn.—Speed indicators.
Whiteley Steel Co., Muncie, Ind.
Atwood Mfg. Co., Amesbury, Mass.—Lamps and generators.
Standard Roller Bearing Co., Philadelphia, Pa.—Bearings.
Motor Car Specialty Co., Philadelphia, Pa.—Speed indicators and specialties.
Conn. Telephone & Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.
Diezmann Shock Absorber Co., Hoboken, N. J.—Shock absorbers.
Avery Portable Lighting Co., Milwaukee, Wis.—Gas tanks.
Precision Appliance Co., Chicago.—Hill precision oilers.
Witherbee Igniter Co., New York.—Witherbee storage batteries and Wico spark plugs.
Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles.
Harley-Davidson Motor Co., Chicago.—Harley-Davidson motorcycles.
Armac Motor Co., Chicago.—Armac motorcycles.
G. H. Curtiss Mfg. Co., Hammondsport, N. Y.—Curtiss motorcycles.
Fowler-Manson-Sherman Cycle Mfg. Co., Chicago—Manson motorcycles.
Light Mfg. & Foundry Co., Pottstown, Pa.—Light motorcycles.
Excelsior Motor & Mfg. Co., Chicago.—Excelsior and Triumph motorcycles.
Consolidated Mfg. Co., Toledo, O.—Yale-California motorcycles.
Merkel Motor Co., Milwaukee, Wis.—Merkel motorcycles.
Hornecker Motor Mfg. Co., Whiting, Ind.—Torpedo motorcycles.
E. L. Hess, Chicago—R-S motorcycles.
American Motor Co., Brockton, Mass.—M-M motorcycles.
Auto-Bi Co., Buffalo, N. Y.—Auto-Bi motorcycles.
L. C. Chase & Co., Boston, Mass.—Cover and top materials.
Stackpole Battery Co., St. Mary's, Pa.—Batteries.
American Electrical Novelty & Mfg. Co. New York—Ever Ready batteries, lamps and tire specialties.
Vesta Accumulator Co., Chicago.—Batteries.
Igniter Appliance Co., Cleveland, O.—Ignition specialties.
Rands Mfg. Co., Detroit, Mich.—Tops and accessories.
Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel horns.
C. T. Ham Mfg. Co., Rochester, N. Y.—Lamps.
Pittsfield Spark Coil Co., Dalton, Mass.—Ignition specialties.
National Oil Pump & Tank Co., Dayton, O.—Storage tanks.
Limousine Carriage Mfg. Co., Chicago.—Wind shields.
A. R. Mosler & Co., New York.—Spark plugs.
Sherwin-Williams Co., Cleveland, O.—Paints and varnishes.
Standard Lamp & Mfg. Co., Chicago.
Motor Way, Chicago.
Continental Caoutchouc Co., New York.—Continental tires.
Eugene Arnstein, Chicago.—Accessories.
Motor, New York.
Acetylene Co., New York.—Carbide and lamps.
Thos. Prosser & Son, New York.—Krupp steel.
Ventilated Cushion & Spring Co., Jackson, Mich.—Ventilated cushion system.
Edward Neely & Co., Chicago.—Specialties.
Newmastic Tire Co., New York.—Compound tire filler.
Franco-American Auto & Supply Co., Chicago.—Batteries.
Cycle & Automobile Trade Journal, Philadelphia, Pa.
McCanna Mfg. Co., Chicago.—Supplies.
Standard Varnish Works, Chicago.—Varnish.
Motz Clincher Tire & Rubber Co., Akron, O.—Tires.
Morrison, McIntosh & Co., Grinnell, Ia.—Gloves and gauntlets.
Horseless Age, New York.
Manhattan Screw & Stamping Co, New York.—Lamps, horns and tire carriers.
Motor Age, Chicago.
Excelsior Supply Co., Chicago.—Accessories.
Class Journal Co., New York.
Heitger Carburetter Co., Indianapolis, Ind.—Carburetters.
Healy Leather Tire Co., Chicago.—Tires.
Auto Parts Co., Chicago.
Edmund E. Haus Co., Minneapolis, Minn.—Gasolene gauges.
F. A. Brownell Motor Co., Rochester, N. Y.—Motors.
Electrical & Mechanical Development Co., Asbury Park, N. J.
Norris Auto Co., Saginaw, Mich.—Tire protectors.
Central Rubber Co., Chicago—Tires and rubber goods.
Robert Bosch, New York, Inc., New York City.—Sims-Bosch magnetos.
Troy Carriage Sun Shade Co., Troy, O.—Tops.

Non-Stop Run in Show Window.

With a schedule calling for 180 hours non-stop running, a Franklin air cooled motor was set going Saturday night in the window of the H. H. Franklin Co.'s Chicago branch on Michigan avenue. The motor is to run during the whole period of the Chicago show. Officials of the Chicago Motor Club and other prominent representatives of the trade supervised the starting of the motor and will inspect the engine when the affair is over. The motor is being run at a rate corresponding with a car speed of about 30 miles per hour, and 180 hours would be equivalent to 5,400 miles, or as far as from San Francisco to New York and back to Omaha. Since the motor is being run indoors, the test of the air cooling feature will be peculiarly severe.

HAIR SPLITTING RELIABILITY RUN.

(Continued from page 525)

charged two points while the Maxwell, driven by J. Mitchell, suffered 610 demerit marks. The Rapid 'bus had 66 points tacked on its score. The day was not free from accidents and considerable confusion was caused when several of the cars lost the road, after the wind had blown the trail of confetti forty ways. Van Sicklen, in the pilot car, while giving a contestant a wide berth, ran into a ditch and threw one of his passengers out. The Maxwell, in attempting to get out of the way of the Wayne bumped into a curb and suffered a broken wheel which lost a number of points for it.

When all the score cards had been examined ten cars were found to have perfect scores, and these were later reduced when the officials began to hunt for scratches on the varnish, or almost as bad as that, in order to find something that would detract from the "reliability" of the cars. Ted Collier's Rambler was assessed 8 points because a speedometer bracket had worked loose, and Arthur Kumpf's Pierce-Arrow was dropped from the honor roll because a grease cup on the rear axle was found loose. A loose bolt on the drive shaft inflicted 6 points upon Ralph Owen's Oldsmobile, while R. E Parker's Auburn, which also was with the leaders, had the front wheels about a thousandth of an inch out of plumb; that irregularity cost it 10 points. Leitch's White was debited 12 points because of an apron cord had become chafed, as explained elsewhere, a trivial enough thing. W. Mitchell's Locomobile lost 12 points, William Smith's Studebaker 18 points, Webb Jay's Kisselkar 18 points, and John Aiken's National lost 26 points in the final reckoning and elimination. The score:

1	Frank Nutt, Haynes	0
2	Arthur Kumpf, Pierce Arrow	2
3	Ralph Owen, Oldsmobile	6
4	Ted Collier, Rambler	8
5	R. E. Parker, Auburn	10
6	W. Leitch, White	12
7	W. Mitchell, Locomobile	14
8	William Smith, Studebaker	16
9	Webb Jay, Kisselkar	18
10	John Aitken, National	26
11	D. Kilbourne, Silent Knight	54
12	Paul Hoffmann, Pierce Arrow	55
13	F. Holmes, Jackson	66
14	F. Leiser, Locomobile	67
15	Barney Oldfield, Autocar	74
16	Ray McNamara, Premier	78
17	John Haynes, Dragon	90
18	C. Englebeck, Stoddard-Dayton	107
19	C. Denzer, White	110
20	H. Sheridan, White	137
21	C. Clark, Stevens-Duryea	186
22	F. Grogan, Rapid	188
23	F. Gremel, Wayne	620
24	M. Vandecar, Reo	620
24	M. Vandecar, Reo	1,040
25	O. Klose, Maxwell	1,108

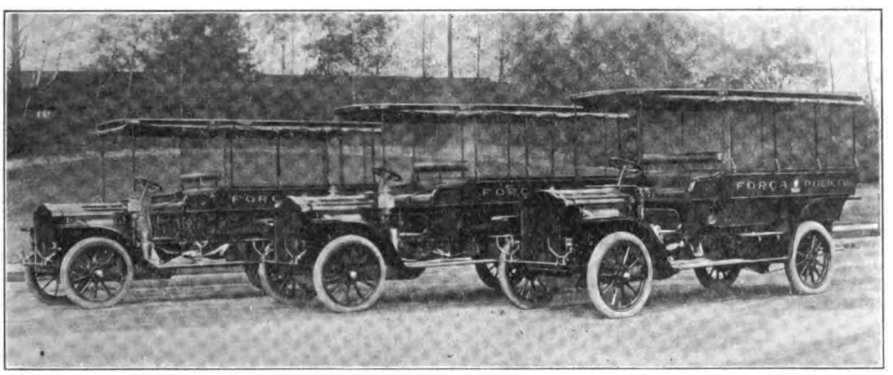
J. Hanson, Pierce Racine, out third day. R. Smith, Matheson, out third day. D. Buck, Matheson, out second day. R. Cook, Royal Tourist; J. Heineman, Matheson; E. Schiefler, Jackson; J. Barnes, Frayer-Miller; C. Price, Marion; C. Coey, Thomas, and B. Payne, Stoddard-Dayton, out first day.

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RIO PRISONERS TO RIDE IN STYLE

They Will Make Their Enforced Journeys in American Automobiles—Fine Police Outfit for Brazil's Chief City.

With an eye ever alert to the refinements of urban existence as developed in North America and Europe, the government authorities of Brazil have made arrangements whereby the dangerous or disorderly malefactors of Rio Janeiro may enjoy the same blessed privileges as offenders in heretofore more favored localities, by being conveyed to the local lockup in automobiles. The three automobile patrol wagons shown in



WHITE STEAMERS FOR THE RIO JANERIO POLICE

the accompanying illustration have just been shipped to Rio in accordance with an order from the Brazilian government. They are White steamers of 30 horsepower and have special bodies built in compliance with the specifications accompanying the order. The coat-of-arms of Brazil is conspicuously painted on either side so that even from the sidewalk it will be possible for the Rio residents to distinguish the vehicles from the private carriages, and the substantial caging will also serve to emphasize the social distinction and exclusiveness of the occupants. Fifteen passengers can be accommodated at a time. The machines are now on the high seas, on their way to South America and the criminal talent of Rio are postponing operations until their arrival with a view to tasting the delights of motoring in the event of being caught.

Pickens's Plan for a Meet Failed.

Because no one seemed anxious to assume liability for damages in case of accident, the Houston (Texas) Automobile Club saved compromising itself through lending its support to a proposed outlaw meet William H. Pickens, under suspension, and L. C. Strang had arranged to hold a meet in conjunction with the Houston Automobile Club on a recent date. The lessee of the Harrisburg track, where the meet was to have been held, generously donated the course, as the major portion of the gate receipts were to have applied to a charitable movement, but he insisted that the promoters of the meet indemnify him against any damage suits that might result from accidents, and also to put the track in good condition after the meet. As the club did not feel called upon to assume the responsibility, and naturally Pickens and Strang would not, even had they the wherewithal, the meet was called off.

Official Disapproval of Closed Roads.

Local ordinances excluding automobiles from public roads in Massachusetts are not to be favored by the State Highway Commission. This was made plain in a talk made by Chairman W. E. McClintock at the first smoker of the Bay State Automobile Association, held in Boston Saturday evening, 30th ult. Mr. McClintock's talk was along the lines of how best to bring about co-operation between motorists and the authorities in securing obedience to the laws and ordinances. About a hundred members of the association attended the smoker.

Albany Club Shows Rapid Growth.

At its annual meeting last week the Albany (N. Y.) Automobile Club elected the following officers; President, M. L. Ryder; vice-president, Dr. W. L. L. Peltz; secretary-treasurer, Chauncey D. Hakes. The membership of the club has been increased by 150 during the past year and now numbers 200 on its rolls.

Johnstown Owners Form a Club.

At an enthusiastic and well attended meeting the Johnstown (Pa.) Automobile Club was successfully launched last week with these officers: President, Charles S. Price; vice-president, W. F. Murdock; secretary, Walter Dowling; treasurer, John L. Stibbich; trustees, J. Leon Repfogle, F. B. Cook and Dr. Francis Schill, Jr.

Cleveland Club Re-elects Its Officers.

At the annual meeting of the trustees of the Cleveland Automobile Club all of the old officers were re-elected for the coming year, as follows: President, Fred S. Scholes; first vice-president, A. Ward Foote; second vice-president, George Collister; treasurer, Windsor T. White.

WHEEL TAX FOR STREET REPAIRS

Chicago's New Source of Revenue Under State Law Just Enacted—Forecast of the Tariff.

Nearly everything on wheels in Chicago will be subject to the new "wheel tax," to be levied under an act which was passed in the lower branch of the Illinois legislature on Tuesday, 26th inst., by a vote of 104 to 13. It already had been passed in the Senate, and now is in the hands of Governor Deneen, who has indicated his intention of signing it.

This legislation was inaugurated by Mayor Busse of Chicago, at whose request the bill was drafted and introduced in the legislature. He had been advocating a wheel tax ever since he took office in April last, his argument being that it offered the best means of preserving the pavements in Chicago. The measure was enacted as an amendment to the cities and villages act, and it will enable any city or town in Illinois to levy a tax on all vehicles for the purpose of raising funds for repairing streets and public ways. Attached to the bill is an emergency clause which will make the act effective as soon as it is signed by the Governor.

As soon as the measure becomes law Mayor Busse will send to the city council a message calling attention to the action of the legislature and advising the passage of an ordinance levying the taxation authorized, and fixing the rates. The amount of money to be raised by this means will be determined by the council. Mr. Hanberg, commissioner of public works, who was much interested in the measure, and Mr. Doherty, superintendent of streets, already have worked out a tentative schedule of rates. They estimate that more than 80,000 vehicles use the streets of Chicago. This estimate does not include bicycles and motorcycles, which possibly may escape taxation. Following is the way the sum works out to give Chicago a revenue of $673,000 for street repairs: Automobiles, 6,000, taxed at $20, $120,000; single horse rigs, 45,000, at $5 each, $225,000; double horse wagons, 25,000, at $10 each, $250,000; three horse spikes, 400, at $15 each, $6,000; four horse wagons, 3,600, at $20 each, $72,000. The city tax on automobiles will be in addition to the State tax of $2 already imposed.

Already there is evident a feeling in favor of discriminating against the automobile and making the tax proportionately greater than in this schedule, the arguments being based on their alleged greater destructiveness to road surfaces and the presumed wealth of their owners. Back of it, of course, is the prejudice of anti-motorists, and this class may be expected to advocate the taxation of motorcycles, if by any chance these vehicles should appear likely to escape.

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GOOD TIME MADE ON LONG HILL

Southern Californians Held Thanksgiving Day Meet in Box Springs Canon—Record for the Long Grade Broken.

Southern Californians, 5,000 of them, saw the annual hill climb up Box Springs Canon near Riverside, Cal., on Thanksgiving Day, which reports from the Golden State heralded as "the best ever." There was a larger attendance than at any previous affair, a consequent increase in interest; better filled events and faster times, the record for the long grade being broken in several of the events. But more or less saddening to relate, in the free-for-all for motorcycles, Paul Derkum, riding a two cylinder machine, made not only the fastest time of the day, but established a record for the course in 4:21⅗. The best time made by an automobile was 5:21½.

The Box Springs grade is not a short hill and the cars cannot make one grand rush from a flying start and get up to the top before the engines begin to pull hard. Instead it is a long steady rise, 3½ miles long, with a gradient averaging about 6 per cent. Not all the cars reached the summit, and "dead ones" were strewn all along the route.

The event for one cylinder motorcycles started the cars moving, and C. W. Risden, Indian, made the fastest time, 5:27⅘, figures that were equalled by but few automobiles. Derkum literally ran away from the field in the free-for-all motorcycles and reached the summit in 4 minutes 21⅗ seconds after the start. This was the fastest time made during the meet.

There was considerable rivalry between the Ford and Maxwell adherents in the first event, for runabouts selling at $850 and under, but neither did what was expected of it. The Standard Motor Car Company's Ford won easily in 6:04. This time was bettered in the next event, runabouts under $1,250, by George Kussman, who drove a Tourist to victory in 5:49⅘. The Ford had no trouble in snatching second from Johnson, in a Jackson.

Frank Siefert, Stoddard-Dayton, made the fastest run in the under $3,000 class for runabouts, although it was a walkover for him, no other contestants showing up at the start. Siefert also won the under $2,500, the same time counting, and the free-for-all runabouts.

The free-for-all touring cars, which was expected to be the classiest race of the day, did not prove as interesting as the touring car race for cars under $3,000. Several of the entrants in the free-for-all did not reach the top. The event went to A. P. Maginnis, driving a Gearless, which car made its initial bow to the California public in an open contest. H. D. Pyns, White, was second. Renton and Harrison put up a great race in the under $3,000 class Harrison had made a fast run from Los Angeles in his Oldsmobile and many looked upon him to take Renton's measure, but the driver of the Great Smith car handled the levers perfectly and won by five seconds. The summary:

	Time.
One Cylinder Motorcycles.	
1 C. W. Risden, Indian	5:57⅘
2 H. Lightcap, R-S	5:50⅘
3 Charles Knoll, Armac	5:57⅗
Free-for-All Motorcycles.	
1 Paul Derkum, Indian	4:21⅗
2 W. G. Colins, Indian	5:20
3 F. B. Buenneman, Indian	5:25⅗
Runabouts Under $850.	
1 Standard Motor Car Co., Ford	6:04
2 Maxwell-Briscoe-Wilcox Co., Maxwell	7:01
3 Maxwell-Briscoe-Wilcox Co., Maxwell	7:29½
Runabouts Under $1,250.	
1 Auto Vehicle Co., Tourist	5:49⅘
2 Standard Motor Car Co., Ford	6:15
3 A. Johnson, Jackson	7:32½
Runabouts Under $3,000.	
1 Frank Siefert, Stoddard-Dayton	5:21½
Runabouts. Free-for-All.	
1 Frank Siefert, Stoddard-Dayton	5:23
2 H. Woodhill, Haynes	6:11
Touring Cars Under $1,500.	
1 George Kussman, Tourist	7:12
2 Western Motor Car Co., Buick	7:18½
Touring Cars Under $2,000.	
1 George Kussman, Tourist	5:43½
2 H. O. Harrison, Oldsmobile	7:34
Touring Cars Under $3,000.	
1 P. A. Renton, Great Smith	6:43½
2 H. O. Harrison, Oldsmobile	6:48
3 C. S. Anthony, Marmon	7:22⅗
Touring Cars Free-for-All.	
1 A. P. Maginnis, Gearless	6:17
2 H. D. Ryus, White	6:27
Runabouts Under $2,000.	
1 Frank Siefert, Stoddard-Dayton	5:21½
Touring Cars Under $2,000.	
1 Lester Pattee, Cadillac	6:12
2 P. A. Renton, Great Smith	6:27
3 Edward Cowan, Rambler	6:34
Touring Cars Under $4,000.	
1 So. California Motor Car Co., American	5:56⅗
2 H. D. Ryus, White	6:11⅗
3 A. P. Maginnis, Gearless	6:16⅗

Date Fixed for Vanderbilt Cup Race.

After transacting a little routine business of no particular moment at its meeting last Wednesday, 27th ult., the executive committee of the racing board of the American Automobile Association adjourned and immediately reconvened as the Vanderbilt Cup Commission. The most important decision arrived at was that the Vanderbilt Cup Race will be held during the fall of 1908, a resolution to that effect being unanimously adopted. The date, rules, entry blanks and course will not be announced until July 1st next, but the entry fee will remain the same as in former contests, $1,000, with double fee between the closing of entries on September 1st and October 1st. It is expected that enough of the Long Island motor parkway will be completed in time to permit of holding the race upon it.

NEW YORK TO PARIS BY LAND

Another World Covering Endurance Contest Projected—Promoters Say Entries Already Are Coming in.

From New York to Paris by land is the project fathered by that indefatigable and utterly Parisian publication, Le Matin, for an automobile endurance contest, and already entries have been received and a great hubbub created, with enterprising representatives of numerous automobile concerns indicating the probable participation of their respective cars in the 15,000 mile contest. While it has all been settled that the cars are to line up for the start at Broadway and Forty-second street, New York, otherwise known as Times Square, and are to finish, as many of them as can, at the office of Le Matin in Paris, the minor details of the date of the start and the route to be followed are still lacking definite settlement, except that in the case of the latter it will obviously be necessary for the contestants to cross over from America to the other continent by way of Bering Strait, the waterway which divides Alaska and Siberia.

Having successfully promoted the Pekin to Paris race, however, Le Matin is confident of the success of the greater venture. The newspaper that has undertaken the American end of the excitement, after giving space to everybody who wants it known that his car is capable of doing the trick, publishes many valuable contributions on the difficulty of the trip, particularly in the Alaska district, from travelers, geologists, explorers and men of science, who variously pronounce the scheme entirely feasible, of doubtful practicability, or utterly impossible. As originally suggested the plan was to have the cars go the whole distance entirely on their own power, the crossing of Bering Strait being accomplished while the surface of that Arctic body of water was covered with thick ice, heavy enough for the machines to use it as a road, but it is probable that the rules in their final form will not impose any such requirements.

As a result of the announcement the promoting publication declares itself "inundated" with letters from would-be participants and near-starters from all over Europe and America. It will nevertheless exercise a cautious deliberation in giving out the definite conditions of the contest and perfecting the necessary arrangements.

Club Hires a Thief Catcher.

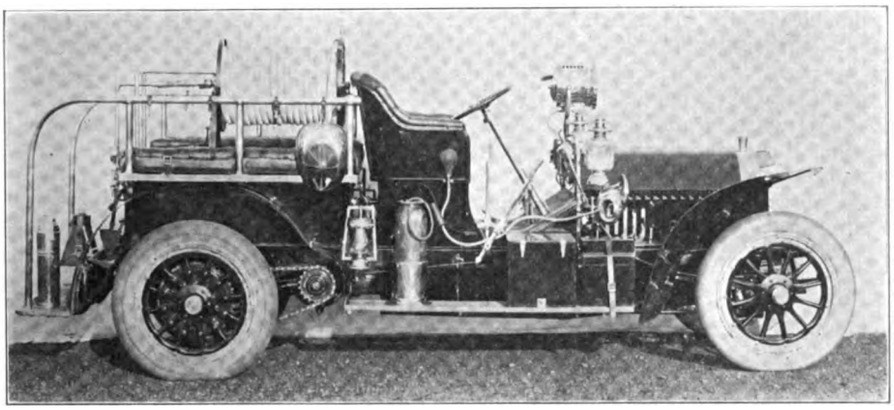
Thievery of cars must prevail larmingly in Minneapolis. To halt it the local club has engaged permanently a detective who is on hand at the club room at all times, ready at a minute's notice to trace a missing car.

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BRIDGEPORT'S NEW FIRE FIGHTER

It Will Travel Fifty Miles an Hour and Combat Flames with Chemicals—Details of Its Equipment.

When Bridgeport, Conn., has a fire from now on it will know it, if by no other sign than that the new automobile chemical outfit which it has just bought will be seen tearing to every conflagration at a 50 mile an hour gait with a big bell ringing and a siren screeching. The car, which is built up on a Locomobile chassis by the Locomobile Company of America, has a 60 horsepower motor, four speed selective transmission and



BRIDGEPORT'S LOCOMOBILE CHEMICAL FIRE ENGINE

side chain drive and weighs about 4,200 pounds. Its fire fighting equipment is a 50 gallon Babcock chemical tank, hose reel and hose, small hand extinguishers, crow bars, axes, helmets and other paraphernalia ordinarily carried on a vehicle of this kind. The normal carrying capacity of the outfit, in addition to the equipment, is eight men, but when necessary ten men may be carried. Although the rig is especially designed all the way through, it is essentially practical and embodies features that Locomobile experience in the building of heavy touring cars for years has shown to be suitable for high speed and heavy service.

The theory of the Bridgeport Fire Department in ordering this fast chemical engine is that the beginning of all fires is small and that if a chemical engine can arrive early it can extinguish them with promptitude and a minimum of damage. Not only does every minute count in the success of chemical engine work, but every second, so that the new fire fighter will be driven at top speed to every alarm. The machine will be in direct charge of two attendants who have been studying the Locomobile at the factory in Bridgeport for the past two months. It will be kept primed and ready to go at the tap of the gong, and to expedite its departure without delay it has been fitted with an ingenious electrical apparatus for lighting the acetylene headlights from the seat, so that at night there will be no time lost in lighting up before getting under way, nor danger incurred attempting to light up after the start.

Stopping a Car Legally Defined.

When a motor car driver is given the signal to "stop" by the driver of a horse, the question arises as to whether he must stop his motor as well, or whether he may simply declutch and, while bringing his car to a standstill, let his motor run. In a legal battle involving damage claims against an automobilist whose machine, although brought to a stop at the roadside, frightened a team of horses with the purring of the motor, the district court in Minnesota decided that when under the State law the horse driver commanded the motorist to stop, the latter should have stopped the whole works and not the car alone. On appeal, however, the supreme court of the State reverses the lower court and indicates that when the motorist stopped his car he did all that was required of him under the law.

The litigation arose out of an accident on a country road near Austin, Minn. The owner of the car, J. Miles Maxfield, was touring when he met a team driven by Mrs. Anna Mahoney. The horses were somewhat frightened and the woman hailed Maxfield to stop. This he did, according to his understanding of the term, by running his car to the side of the road and stopping it, but his motor continued to run. Whether from the noise of the motor or the appearance of the car, the horse in being driven past, took fright and ran away, causing a bad spill. Mrs. Mahoney sued and was awarded $700 damages after the district court of Mower county had instructed the jury that when the law required an automobile to stop it meant that not only the car but the mechanism, as well, must be stopped. Maxfield appealed on error and the supreme court did not look with approval on the district court's method of expanding the State law to mean more than it said, so that the case is sent back for a new trial. Under the supreme court construction of the law, the defendant automobilist will have an easy victory.

ALL THE HONOR FOR MARYLAND

State Championship Won by Native Son Driving Maryland Car—Big Crowd at Baltimore's Meet.

Home talent triumphed at Electric Park, Baltimore, Md., Thanksgiving Day, 28th ult. A Maryland driver, piloting a Maryland made car on a Maryland track won the Maryland championship, and several thousand Marylanders yelled themselves hoarse—the fact that most of them had colds doesn't count—while the band struck up "Maryland, my Maryland." The occasion was the annual Thanksgiving meet promoted by the Maryland Motor Association.

Three cars started in the five mile championship, which turned out to be the best race on the card. Stanley Zell (Thomas) took the lead at the start and opened a wide gap when a broken spark plug left him stalled, and Gooden (Autocar) and Behrens (Maryland) were left to fight it out. Goodens kicked up the dust for the first mile. Behrens came up in the second and for two laps ran a neck and neck struggle with the other. Skilful handling on the turns, however, won the race for Behrens in the last mile, his winning margin being about four feet.

In the three miles for cars under $3,000 Howard Gill (Thomas), electrified (which wasn't difficult at Electric Park) the crowd by his running fight with Friese (Autocar). The last named took the position at the start, but after some hard driving Gill got in front only to have the pole taken away from him in the next lap. Gill finally regained his place at the head and kept it until the finish.

One event that caused considerable amusement was what was termed a "cross country run" between cars of the high-wheeled type. Edward C. Woolman and J. S. Hochheimer, both driving Holsmans, made the running, or rather Woolman did, for he left "der Kaiser" far in the rear.

The summaries:

Three mile novice, motorcycles—Won by Harry F. Fisher (Indian); second, Royal Gill (M-M); third, George J. Lewis (Indian). Time, 5:31.

Two miles for high wheeled cars—Won by Edward C. Woolman (Holsman); second, J. S. Hochheimer (Holsman). Time, 5:13⅘.

Five mile handicap, motorcycles—Won by "Chic" Thomas, 3 horsepower Indian (scratch); second, Fred Mertens, 7 horsepower Peugeot (scratch); third, Royal Gill, 3 horsepower M-M. Time, 7:34⅕.

Three miles for cars under $3,000—Won by Howard W. Gill (Thomas); second, E. H. Friese (Autocar). Time, 5:04⅗.

Five miles free-for-all championship—Won by A. W. Behrens (Maryland); second, E. H. Frieze (Autocar). Time, 8:13⅗.

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Nantucket Tolerates an Automobile.

When the people of Nantucket, Mass., settle down for their winter's enjoyment of what prosperity they owe to the summer sojourners on their island they know of no means of travel other than their horse-drawn vehicles and the steamboat that plies between the island and the mainland when the ice permits. The narrow gauge track of the Nantucket Central Railroad is permitted to lie buried under the snow, and Dobbin supersedes the locomotive when the 'Sconset man wants to go to Nantucket, or the town man has business in 'Sconset.

At least such has been the case, but the automobile, against which the selectmen of the town have been making war all the past summer, and which they are determined to keep off the island roads next summer, if they can, has slipped in among the Nantucketers, over the rails, and promises to save Dobbin many a weary hike between 'Sconset and the town. It is owned by the railroad company, and differs from the road traveling automobile chiefly in the matter of its cast steel wheels, flanged to keep the vehicle on the rails. It is designed to carry both freight and passengers.

Even the anti-automobile element is inclined to regard the innovation with favor. As one man remarked, "I don't care how many automobiles come to Nantucket as long as they run them over the rails and not on the road." But there is some wonderment as to whether the selectmen's order of total exclusion does not bear on this particular automobile.

As to the last order, which closes all the principal streets of the town to automobiles and thus practically bars them from the island, a protest has been framed and signed which soon will be filed with the State highway commission. Among the signers are a number of permanent residents as well as some who make their summer home on the island.

First Across Hartford's New Bridge.

Hartford has a new $2,000,000 concrete bridge between that city and East Hartford. In fact(it is not quite completed, as the final touches are yet to be received, but it has been far enough advanced to cause considerable rivalry as to who would be the first to cross the structure, and for fear some one would get ahead of then Ralph A. Backman, city sales manager of the Pope Mfg. Co., and B. Woolley, of the Manus-Kelly Co., Hartford, got their car out early one morning last week, and loaded with photographers and reporters, decided to rush the bridge, although there were several obstructions, such as barrels of cement, piles of sand, and undriven spikes to be dodged. The trip was accomplished without accident, and they gained the distinction of being the first to cross the new bridge in a vehicle of any kind.

Court to Decide Automobile's Status.

Whether an automobile is a vehicle within the meaning of the statute is a question that will be decided by a full bench of the Supreme Court in Boston, in the case of William C. Doherty against the town of Ayer, Mass. The court will be asked to decide whether cities and towns are bound to keep their highways in a reasonably safe and convenient condition for automobiles. Doherty was awarded a verdict in the lower court for injury to his automobile, which sank ten inches and was stuck in one of the town's roads. Work was being done on the streets at the time and the accident happened at night. The town claims it is not liable to a traveler in an automobile, as the highway statute only makes it necessary to keep its highways in a safe condition for travelers with horses, teams and carriages. The plaintiff in the case held that an automobile is a vehicle within the meaning of the statute and the lower court awarded him a verdict of $200, but the town took an appeal.

Boston's Revenue from Scorchers.

Automobilists have considerably swelled Boston's coffers during the last six months. According to a statement of Police Commissioner O'Meara, the Boston police have made 737 prosecutions in the six months just ended, and the fines imposed in the lower courts have amounted to $6,715.

IF a car enters the most strenuous contests known in motor circles, to-wit, the Glidden Tour and all the Chicago Endurance Runs, and secures PERFECT SCORES, it is greatly to its credit. Breaking the World's Non-stop Record by a large margin—lowering the Boston-New York single and round trip road record—also Boston-Worcester record—satisfying customers in daily use all over the country—all add more to this car's credit.

This Is What the Premier Has Done

You may expect equally satisfactory results, if you buy one. They are even better now than they have ever been.

Three Models of touring cars for 1908 as follows:

Model 24. 24-28 H. P., four cyl., 5-passenger, $2250
Model 30. 30-35 H. P., four cyl., 5-passenger, $2600
Model 45. 45-55 H. P., six cyl., 7-passenger, $3750

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The Week's Patents.

865,039. Means for Securing Soft-Tread Tires to Rims. Frank M. Hilton, John S. Hilton, and William W. Hilton, Akron, O., assignors of one-half to Harvey Musser, Akron, Ohio. Filed May 11, 1906. Serial No. 316,403.

1. A vehicle wheel provided with a rim having a confining flange at one side and a groove, or channel, at the opposite side, the outer wall of the groove, or channel, having notches at intervals, a tire slipped upon the rim and a lock-ring fitted to the grooved side of said rim and having a confining flange co-operating with the confining flange of the rim to prevent lateral displacement of the tire, said locking ring having transversely spaced portions to embrace opposite sides of the outer wall of the grooved portion of the rim, the inner spaced portions consisting of lugs adapted to pass through the notches formed in the outer walls of the grooved portion of the rim and to engage the inner, or rear side thereof.

865,060. Carburetter. Albert F. Rockwell, Bristol, Conn., assignor to The New Departure Manufacturing Company, Bristol, Conn., a Corporation of Connecticut. Filed Dec. 19, 1905. Serial No. 292,441.

1. A carburetter comprising a tank, a coil in said tank having a series of vertical phere and the other end of said coil being in communication with the outside atmosphere and the other end of said coilbeing in communication with the interior of the tank, means for permitting liquid from said tank to enter independena convolutes of the coil, and an outlet port in communication with said tank.

865,099. Engine. George Gray, Mianus, Conn., assignor to The Mianus Motor Works, Mianus, Conn. Filed March 28, 1907. Serial No. 365,127.

1. In a sparking mechanism, the combination with a fixed electrode, a spindle carrying a movable electrode, an arm on said spindle and a stop to receive said arm when in its normal position, of a vertically movable rod passing through said arm, a guide through which said rod moves, a fixed collar on the rod, a spring between said fixed collar and guide, means for engaging said rod to raise it and turn the spindle of the movable electrode to cause the latter to engage the fixed electrode and means for releasing said rod and permitting it to descend after the fixed collar thereon shall have moved above the arm on the spindle of the movable electrode.

865,101. Lubricating Means for Internal Combustion Engines. Carl O. Hedstrom, Springfield, Mass. Filed June 12, 1907. Serial No. 378,558.

1. In an oiling system of the class described, in combination, a casing, a rotary member mounted therein, a plurality of cylinders secured to the casing and having pistons therein connected to the rotary member, the rotary member having two sections or portions and located under oppositely disposed plates or webs that partially close the opening of the cylinders, whereby the lubricant which is contained in the casing may be equally distributed by the centrifugal action of the rotary member to the cylinders, said plates being also provided with diagonally disposed openings over the rotary members, as described.

865,115. Wheel. Edward D. Markham, Chicago, Ill. Filed Sept. 17, 1906. Serial No. 334,907.

1. A wheel comprising a hub, spokes secured to the hub and out of engagement with the rim, cylinders carried by the rim, pistons therein and piston rods connected to said pistons, the free ends of the spokes being loosely connected to said rods.

865,117. Rotary Engine. Ernest Muhl Philadelphia, Pa. Filed Oct. 8, 1906. Serial No. 337,855.

1. In a device of the character described, a fixed cylinder, a movable cylinder eccentric thereto, pistons operating in the movable cylinder, an inlet port, a valve, a crank arm operating said valve, a rod connected with said crank arm, and a plurality of pins operating said rod with rotation of the movable cylinder.

865,134. Rubber Tire Setter. Henry L. Stoup, Ypsilanti, Mich. Filed March 9, 1907. Serial No. 361,585.

1. A machine of the character described, comprising a shaft having right and left threaded portions, a guide parallel to said shaft, wire-engaging members respectively engaging said right and left threaded portions of said shaft, and longitudinally slidably engaging said guide, and a bifucated arm intermediate said wire engaging members and sleeved upon said shaft and guide.

865,135. Internal Combustion Motor. Benjamin L. Toquet, Westport, Conn. Filed Jan. 6, 1906. Serial No. 294,960.

1. The combination in an internal combustion motor, of a working cylinder, a chamber to supply the explosive mixture to the working cylinder, connecting means between the cylinder and the chamber, and a screen and valve means whereby the explosive mixture is directed either wholly or partly through the screen or clear of it.

865,161. Lawn Mower. William H. Coldwell, Newburgh, N. Y. Filed Feb. 20, 1907. Serial No. 358,381.

1. The combination with a lawn mower provided with a motor frame provided with a lawn rolling roller, and a separate frame forward of the said roller, carrying the cutting mechanism, and connections between said frames permitting them to move with respect to each other, of a grass receptacle, carried by said motor frame extending transversely across the machine, located adjacent to the cutting mechanism, and having a discharge aperture at one end, a feeding mechanism for feeding the cut grass in said receptacle toward said discharge aperture, and mechanism carried by the motor frame, for supporting and continuously operating said feeding mechanism, substantially as described.

865,201. Reversible Transmission Gear. Walter S. Morton, Upper Sandusky, and Moses W. Kouns, Columbus, Ohio, assignors to The Ohio Manufacturing Company, Upper Sandusky, Ohio, a Corporation of Ohio. Filed Feb. 23, 1907. Serial No. 358,795.

1. In a device of the character described, the combination, with a shaft and a plurality of gears mounted thereon and adapted to be connected one to the other, of a second shaft, a pinion mounted on said second shaft and adapted to mesh with one of said gears, a second pinion mounted on said second shaft, a flexible driving member adapted to connect said second pinion with another of said gears, and means for connecting said pinions to said shaft.

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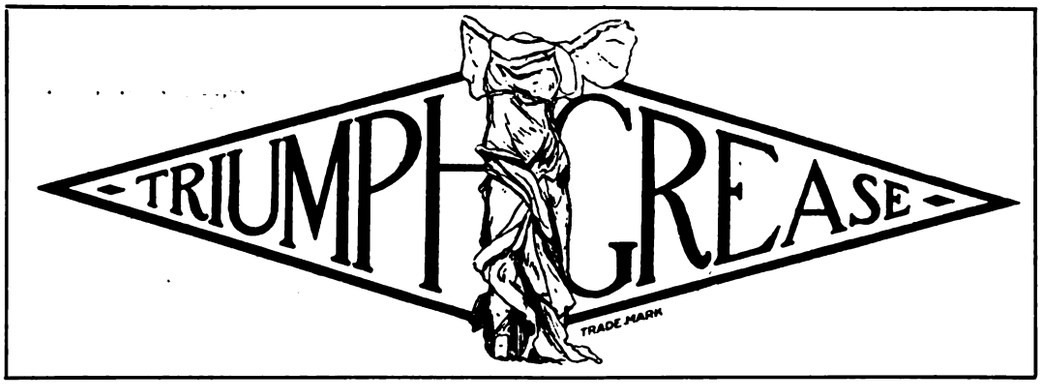
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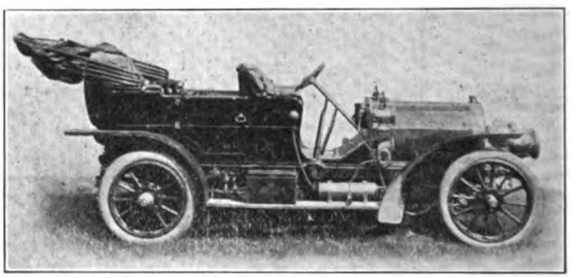
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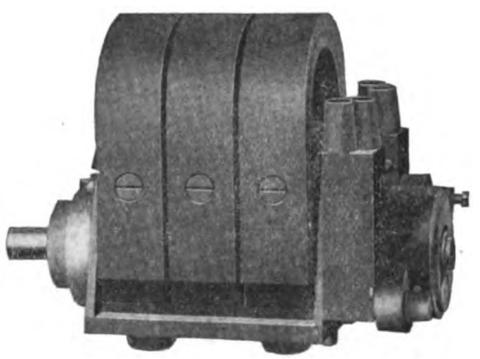
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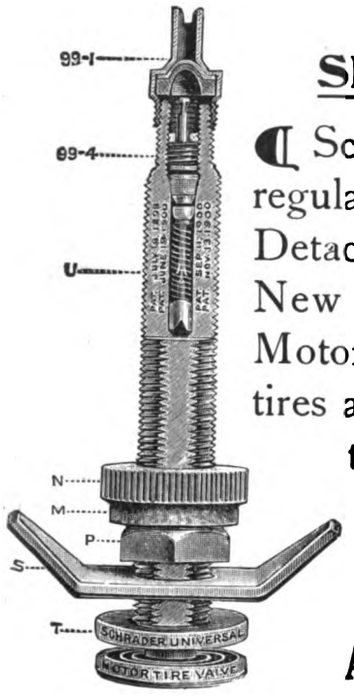
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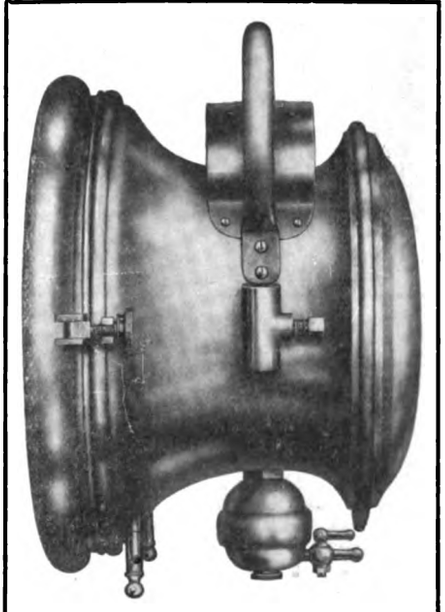
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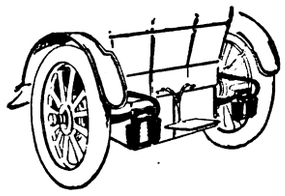
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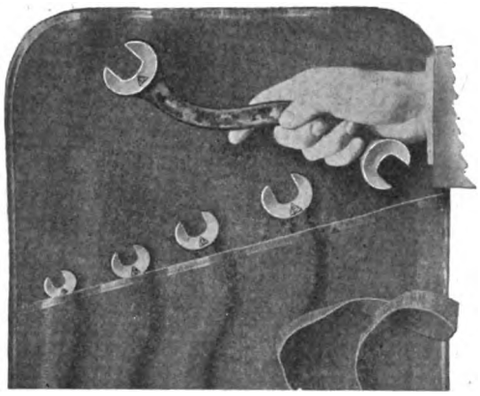
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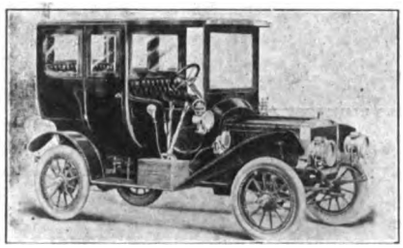
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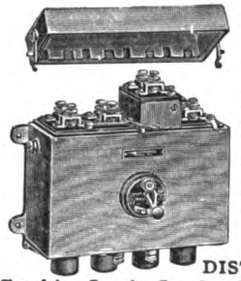
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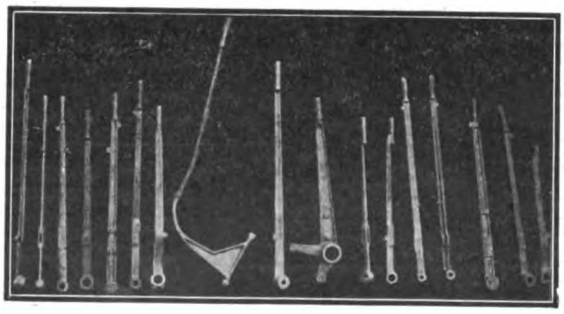
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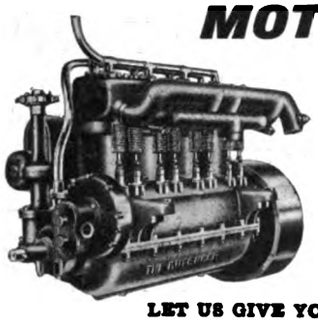
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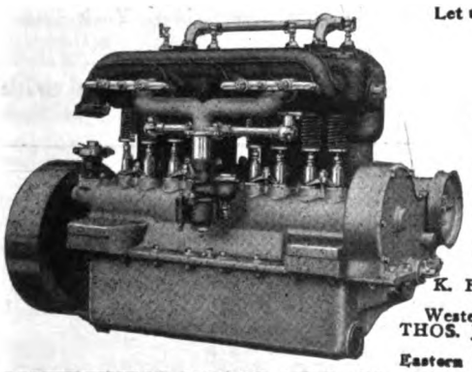
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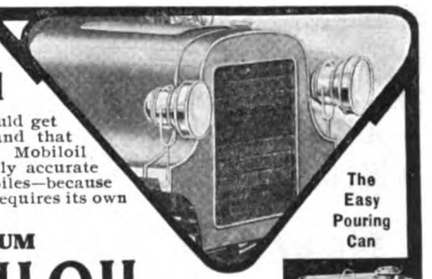
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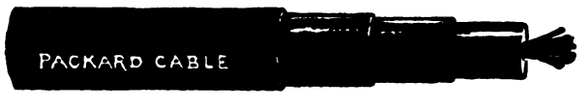
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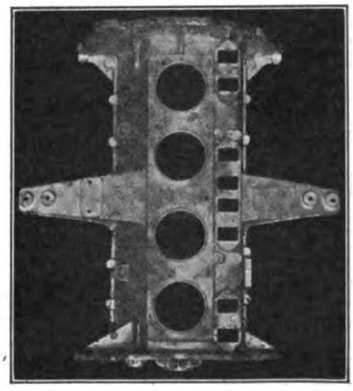
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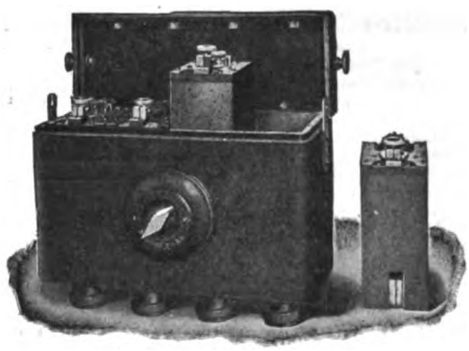
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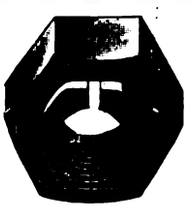
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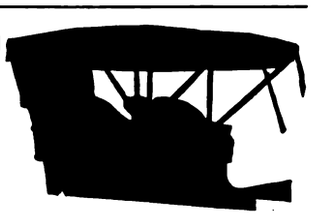
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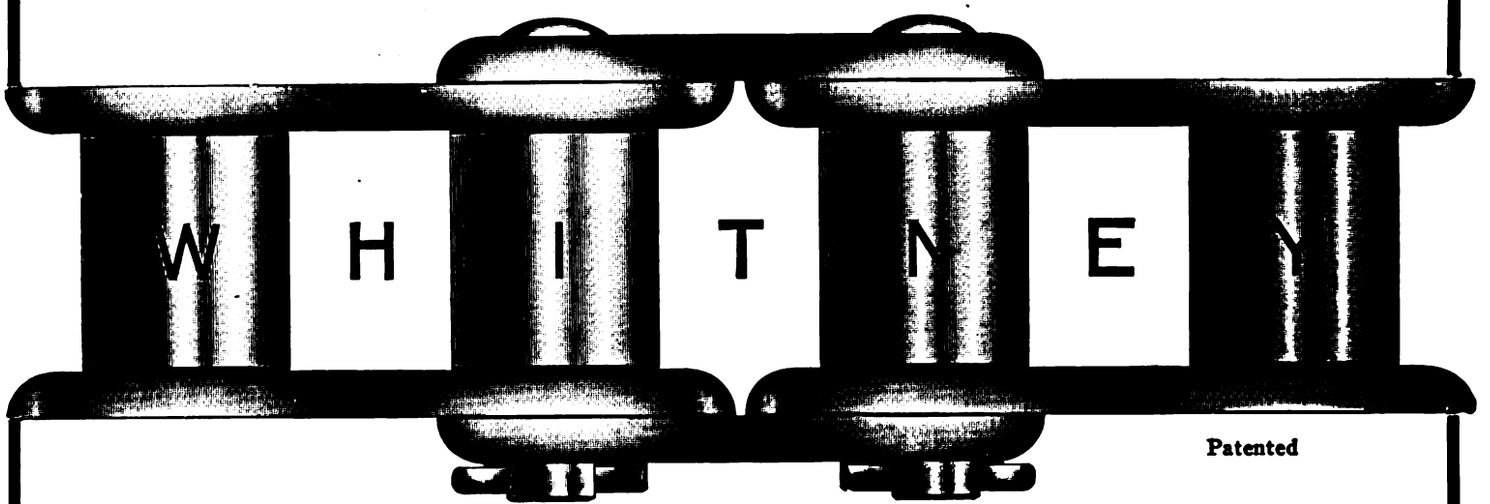
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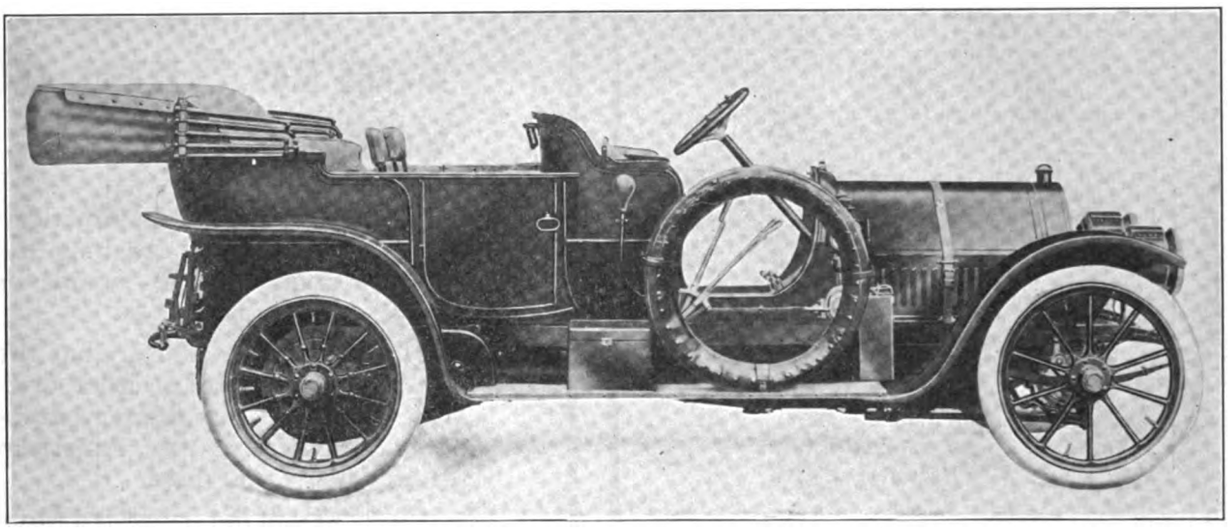
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From the *Chicago Evening American*, December 3, 1907.

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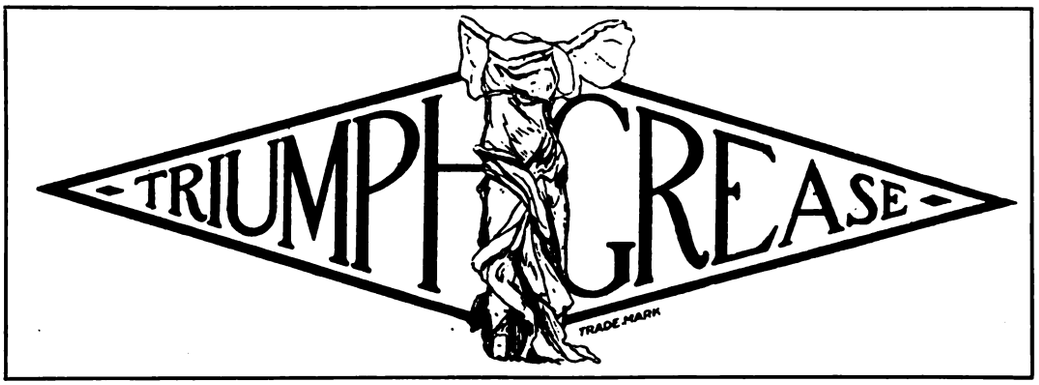
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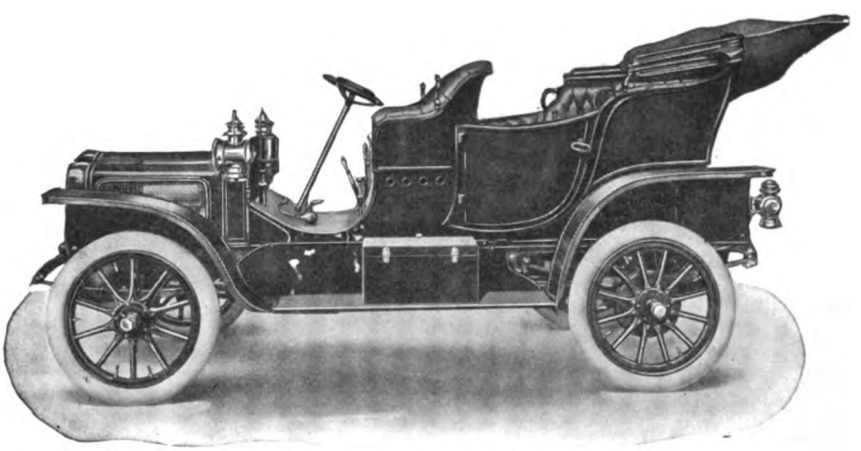
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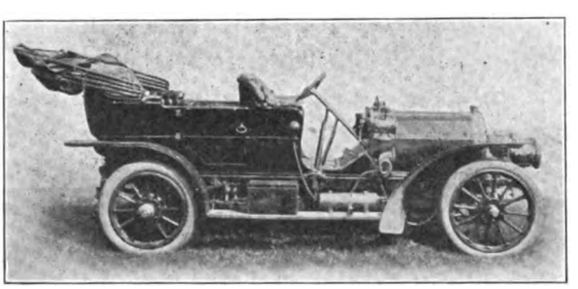
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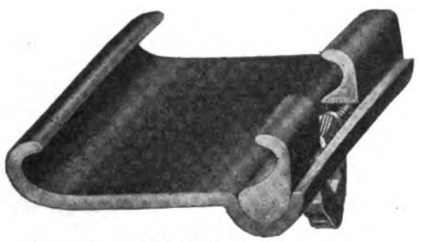
Motorist, Dealer and Manufacturer

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We do not mean by this that trouble is unknown to the users of these tires, but it does mean most emphatically that the exceptional service given by these tires has commanded the favorable attention of manufacturers, dealers and owners throughout the country.

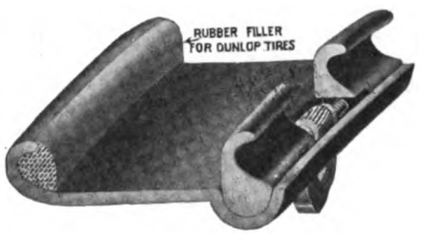
Some manufacturers, dealers and motorists don't know this; that's because they don't specifiy Morgan & Wright tires.

Furthermore, this "favorable attention" has been converted into generous orders—already booked—for 1908 deliveries.



CLINCHER

The Improved Midgley Rim, illustrated above, accommodates every make of Clincher or Dunlop tires, as well as every type of mechanically-fastened tires, except one. Standard measurements thruout, including inside diameter. Solid bead.



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1908 Locomobile

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Every Matheson car turned out in the last ten years is still running and is reported to be in good condition. Most of the Mathesons turned out within the last three years have never had a single replacement and are still giving perfect service to their original purchasers. Many 1906 Mathesons have to date, been not only free from repairs but from even adjustments. We have many letters from owners of 1907 Mathesons who have given their cars hard and constant use for the last seven months without spending five cents for repairs.

The salient Matheson features are those of the greatest foreign cars. The Matheson differs from these in one important respect—it's better. The great string of Matheson victories during the past season, its new speed records, hill climbing records, endurance records, its perfect scores galore in reliability contests, made not only without need of repairs, but without even adjustments, all these have repeatedly proven to us that there is no room for improvement in the Matheson. We have sought in vain for records of performance that would direct the improvement of a single feature. Feature for feature through the world's output of high powered cars, not excepting the best of the foreign makes, there is nothing that can compare with the Matheson for performance over American roads.

Write for our new booklet, "I Drove my Matheson—" by Matheson owners, some of whom have made thousands of miles without even an adjustment, some of whom have gone through an entire season with a repair bill of nearly five cents. The Matheson sets a standard by which you may judge other high powered cars.

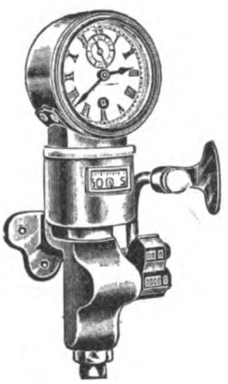
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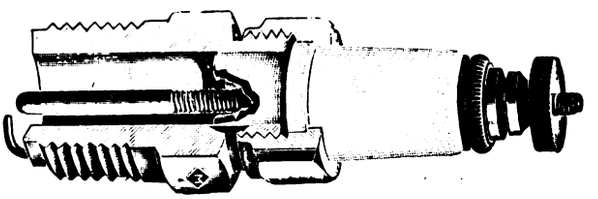
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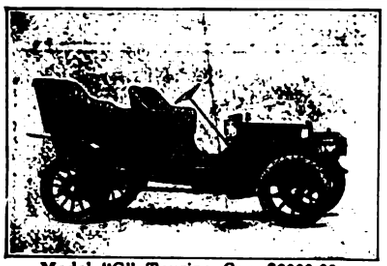
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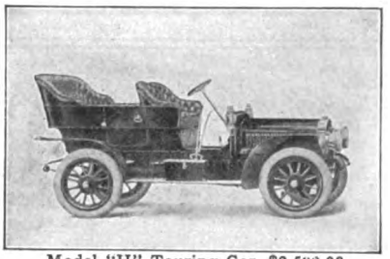
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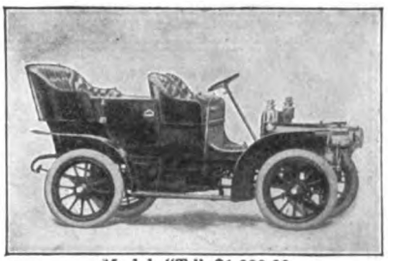
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Model "H" Touring Car, $2,500.00
30 H. P. Four Cylinder



Model "T," $1,000.00
10 H. P. Single Cylinder



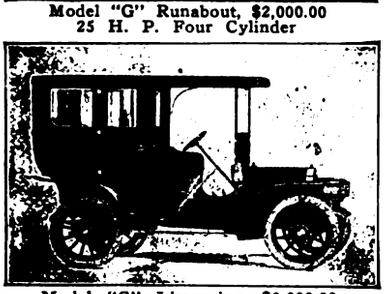
Model "G" Runabout, $2,000.00
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Model "H" Limousine, $3,600.00



Model "T" Coupe, $1,350.00
10 H. P. Single Cylinder



Model "M" Delivery, $1,000.00
10 H. P. Single Cylinder

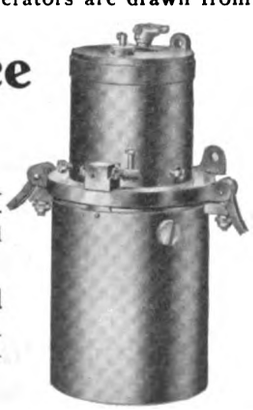
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This makes leakage a remote possibility. Other makes are either square or oblong and of riveted and soldered sheets.

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From the standpoints of economical maintenance, absolute reliability and minimum depreciation in market value, the



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The 1908 models mark the nearest approach to mechanical perfection ever attained.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, December, 12, 1907. No. 11

DAIMLER CUTS OUT MIDDLEMEN

In Heralding Maja, Sister of Mercedes, This Decision is Made Known—"Stupendous," Declares Press Agent.

Fraulein Maja Jellinek no longer has cause to be envious of her sister Mercedes. Their doting father, who is high up in the Daimler Motoren Gesellschaft, now has placed them on the same level.

He has named a motor car for Maja (pronounced Mya) exactly as several years since he styled one Mercedes; but—unkind cut—he says the Maja is better in every way than the Mercedes. It is to be built wholly in the Daimler company's Austrian factory and any American possessed of the price, will be able to buy one right here in New York, where a Maja branch will be located. But agents are not wanted. The Daimler people declare they are through with middlemen of all sorts and couple the declaration with references to "graft" and "subtle practices" that scarcely will be relished by the men who previously handled the Mercedes for them.

The Maja chronicleer supplements these statements and intimations, to say nothing of a mass of superlatives, with an expression of deepest amazement that "an undertaking so stupendous could advance to a commercial actuality without a breath of the news reaching the public." Despite the "tremendousness" of the news, however, the world has continued to revolve in the same old way and the Statue of Liberty has not been rocked from its pedestal.

Shoemaker Gets an Extension.

The Shoemaker Automobile Co., for which a receiver was appointed while removal from Freeport, Ill., to Elkhart, Ind., was in progress, is in a fair way to overcome its difficulties. It is stated that the creditors have consented to a six months' extension and that the residents of Elkhart who subscribed for $36,000 worth of the stock have overcome their temerity and agreed to produce the money. Meanwhile, the company has elected the following officers: President and treasurer, C. C. Shoemaker; secretary, S. Cooper, Kansas City; foreman, Harry Shoemaker; directors, F. L. Feckler, St. Paul; F. Shire, Cincinnati; Dr. J. T. White, Dan Brubaker, C. C. Shoemaker, Freeport; S. Cooper, Kansas City.

To Make Opening for Knox Creditors.

Obstacles that prevented it having been removed formal steps toward placing the Knox Automobile Co., Springfield, Mass., in the possession of its creditors until their claims are satisfied, will be taken on Monday next, 16th inst., at a meeting of the stockholders, called for the purpose.

At that time a proposal to increase the capital stock from $500,000 to $1,000,000 will be considered, the increase being necessary in order that shares in the company may be apportioned to the creditors who accepted the assignee's offer to take stock in payment of their claims. The changes in the by-laws, necessary to give the shareholding creditors the controlling voice in affairs of the company until its debts are liquidated by retirement of the creditor's shares, also will be submitted.

Pierce in a Tire Company.

The Empire State Tire Co., which recently was incorporated and which has established a plant at 198-200 Terrace, Buffalo, N. Y., has for its vice-president George N. Pierce, of the George N. Pierce Co. The other officers are Sylvanus B. Nye, president, and William F. McClurg, secretary-treasurer. The factory superintendent is Lemon Greenwald, under whose patents the company will operate in producing what is styled the extensible tread pneumatic tire, a non-skid tread and an armored non-puncturable protector, which is designed to be placed between the shoe and the inner tube. In addition, the company will make a feature of installing in garages or repair shops complete tire repair apparatus, including vulcanizers, etc.

RECEIVERS FOR ELECTRIC VEHICLE

Their Appointment Follows Failure to Renew Bonds and Friendly Action—Liabilities Exceed $3,600,000.

On Tuesday last, 10th inst., the Electric Vehicle Co., which has its plant in Hartford, Conn., and which is a New Jersey corporation capitalized at $20,000,000, was placed in the hands of Hasley M. Barrett, of Bloomfield, N. J., and Henry W. Nuckels, of Hartford, as receivers, by Judge Joseph Cross of the United States Circuit Court at his home at Elizabeth, N. J. Mr. Nuckels is the secretary and treasurer of the company. The bond of each receiver was fixed at $200,000. The application for the appointment of receivers was made by the Hartford Rubber Works Co., which has a claim of $11,785 against the Electric Vehicle Co., and was in the nature of a friendly proceeding designed to protect the general creditors. Later, Mr. Barrett and W. S. Montgomery were named as auxiliary receivers for the company's New York property.

On the day following Messrs. Barrett and Nuckels appeared before Judge Wheeler in Chambers at Hartford, Conn. At the close of the hearing they were appointed receivers for the Connecticut properties of the company, their bonds being fixed at $200,000.

The immediate cause of the company's failure was the financial stringency which made it impossible to borrow money for current expenses and to meet or renew the $2,500,000 mortgage bonds which matured on November 1st last.

Apart from the $2,500,000 bonds which are secured by a mortgage on the property of the company held by the Morton Trust Co. of New York, as trustee, the liabilities comprise demand promissory notes to the amount of $591,043.32, a note for $300,000 which fell due on December 3 last, a note for $2,600 due December 25 next, and a note

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for $5,708.18 due January 15 next, accounts payable aggregating $204,790.32 of which $150,000 has been due and unpaid since November 15. The total is $3,604,141.82, of which $2,016,000 is past due. The assets are listed as follows:

Plant, land, buildings, machinery, appliances, book value	$717,498.16
Office furniture	4,731.54
Finished vehicles	173,087.73
Consigned vehicles and merchandise, book value	90,387.51
Raw materials, supplies and parts	770,474.20
Finished parts	378,714.00
Stocks and bonds of other corporations, book value	358,002.00
Patents and patent licenses, book value	11,447,537.28
Accounts and notes receivable	132,000.00
Cash	12,000.00
Total	$14,084,432.42

In addition the schedule mentions as an asset the item of "good will," and alleges that under this head the trademark of "Columbia" is of great value. The company is the sole owner of the noted "Selden" patent, which is used by the Association of Licensed Automobile Manufacturers, and from which a large amount in royalties is derived.

According to the 1907 edition of "Moody's Manual" the Electric Vehicle Co. was incorporated in the State of New Jersey on September 27, 1897, to manufacture automobiles, and subsequently acquired the interest of other concerns in similar lines, including the New Haven Carriage Co., the Siemens-Halske Electric Co. of Chicago, the Motor Vehicle Co. of Elizabeth, N. J., and the Columbia Automobile Co. of this city. The company's product has been distributed through various subsidiary companies, including the New York Electric Vehicle Transportation Co., the Pennsylvania Electric Vehicle Co., the Illinois Electric Vehicle Transportation Co., the New England Electric Vehicle Transportation Co., and the New Jersey Electric Vehicle Transportation Co.

The authorized capital stock of the company at first was $10,000,000. This was successively increased to $12,000,000, to $18,000,000, and then to $2,000,000. Of this $9,000,000 is 8 per cent. cumulative preferred, par $100. There is outstanding $10,450,000 common and $8,145,000 preferred. Dividends were paid regularly on the preferred stock quarterly at the full rate from April, 1899, to April, 1900, and on the common 8 per cent. was paid in 1899 and none since. The Electric Storage Battery Co. of Philadelphia owns $3,152,000 of preferred stock, $3,212,300 of common, and $540,000 in bonds. The bonded debt of the company is given in the "Manual" as $1,774,000, refunding first 6s, extended in 1905 and due on November 1, 1907.

The Columbia Motor Vehicle Co. of Boston is a subsidiary company of the Electric Vehicle Co., and the Electric Vehicle Co. of 1332 Michigan avenue, Chicago, and the Electric Vehicle Co. of 134 West Thirty-ninth street, New York, are branch offices of the Hartford company.

During recent months there have been several changes in the Board of Directors of the company. H. H. Vreeland retired as a director some months ago, and M. J. Budlong, who was president, resigned that office and was succeeded by Walter G. Henderson, of the Electric Storage Battery Co. Grant B. Schley, Jr., was another director who resigned recently. Among the other directors are M. Gavin, a son-in-law of James J. Hill, and who is associated with Moore & Schley; W. O. Knudson, and Albert Taylor.

The appointment of receivers for the Electric Vehicle Co. will cause no surprise to those conversant with the condition of affairs in that company. It has been generally known that the mortgage bonds covering the plant of the company at Hartford, Conn., the plant of the New Haven Carriage Co., at New Haven, Conn., and stock in various subsidiary companies both had affected and restricted their merchandise credit to no little extent. Furthermore the bonds of the company when issued were underwritten at 90 and were largely controlled by interests identified with the Metropolitan Street Railway Co., of New York, and the Electric Storage Battery Co., of Philadelphia.

The trade has recognized the fact that the Electric Vehicle Co. could have been continued as a "going concern" if their bonds could have been renewed, as their income from the Selden Patent alone—which is 3/8 of 1¼ per cent. of the price of all the vehicles sold by members of the Licensed Association of Automobile Manufacturers—netted annually for the past three years an average exceeding $200,000, which would have been more than sufficient to take care of the interest charges on their bonded indebtedness. However, with financial conditions which have prevailed in New York for the past three months it was anticipated that the company would have difficulty in renewing their bonds. It is reported from authentic sources that while their bond issue amounts to $1,521,000, the balance has been pledged as collateral for money advanced on the company's paper.

In a statement issued immediately after their appointment, the receivers say:

"Plans are already being considered for the rehabilitation of the company and it is confidently expected that within a comparatively short time creditors' claims will be met and the company be put in a position to continue its business with new capital. The courts of New Jersey, New York and Connecticut have all authorized the receivers to conduct the business of the company and it is proposed by the receivers to so continue to conduct it without interruption, except that it will be necessary to close the factory for a few days (probably the rest of the week) beginning Wednesday, to take an inventory in accordance with the order of the superior court.

"One of the most valuable assets of the company will doubtless prove to be its rights under the Selden patent, and it is the intention of the receivers to see that those rights are fully protected in every way so that the Selden situation will continue with practically the same status as existed before the appointment of receivers." The association of Licensed Automobile Manufacturers will not be affected in any way whatsoever by the complications.

BUSINESS DIFFICULTIES.

Albert L. Pope and George W. Yule, receivers for the Pope Motor Car Co. have applied for the appointment of a receiver for the R. H. Magoon Motor Car Co. Cleveland, Ohio. They allege that R. H. Magoon, doing business as the Magoon Motor Car Co., owes the Pope company $3.517.92, and that Magoon has transferred his property to his wife, to place it beyond the reach of creditors. Mrs. Magoon is made a party to the suit.

Schedules filed by the Back Bay Automobile Co., of 171 Huntington avenue, Boston, Mass., which was petitioned into bankruptcy August 15, disclose liabilities $39,344 and assets $11,635. Almost all the claims are small. There is one promissory note of $1,000, and a promissory note and money loaned amounting to $1,415. Claims amounting to $12,000 are secured by a chattel mortgage and company stock.

A petition in voluntary bankruptcy has been filed by the Atkinson Automobile Garage Co., Lockport, N. Y. The schedule shows liabilities amounting to $2,066 47 and assets consisting of stock in trade valued by the petitioners at $3,909.25.

Schedules in bankruptcy filed by the Duplex Ignition Co., New York, disclose liabilities of $8,387 and assets of $3,131. The latter consist of accounts, $1,531; stock, $600, and a patent which is pending and which is valued at $1,000.

Huntington in Hands of Receiver.

On the petition of the Bank of Huntington, whose claim amounts to $3,000, and the Harburg Tire Company, with a claim of $14.000, Clifford M. Tappen has been appointed receiver for the Huntington Automobile Co., Huntington, N. Y.. It is alleged in the petition that the mismanagement of the company's former president is responsible for its difficulties. The company built several cars which were so closely patterned after the Mercedes that even that name was preyed upon by the use of the inapt dsignation "Merciless."

Elkhart Testing a New Buggy.

The Elkhart Carriage and Harness Co., Elkhart, Ind., is making ready to place a motor buggy on the market; a vehicle of the sort is now under test.

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THE WEEK'S INCORPORATIONS.

Milwaukee, Wis.—Meiselbach Motor Wagon Sales Co., under Wisconsin laws, with $10,000 capital. Corporators—John Wild, T. D. Clain and others.

Louisville, Ky.—Oldsmobile Company of Kentucky, The, under Kentucky laws, with $20,000 capital; to deal in automobiles. Corporators—W. E. Stokes, W. F. Glenn, Jr., L. Marble.

Newark, N. J.—National Auto Transit Co., under New Jersey laws, with $25,000 capital; to conduct automobile livery. Corporators—W. S. Muchmore, Newark; W. W. Lochnberg; L. H. Abbey, East Orange,

New York City, N. Y.—Keeton Motor Co., under New York laws, with $10,000 capital. Corporators, John H. Kellock and Frank P. Reilly, 60 Wall street; Babel Goudchaux, 218 West 112th street, New York City, N. Y.

Wilmington, Del.—Dragon Motor Co., under Delaware laws, with $1,000,000 capital; to manufacture motor vehicles of all kinds. Corporators—John C. Calhoun, John Kane Mills, A. L. Kull, R. G. Kelsey and C. A. Pickard.

New York City, N. Y.—Acme Tire Chain Co., under New York laws; with $25,000 capital. Corporators—Alois B. Saliger and William Kerrigan, 514 Pearl street, New York City, N. Y.; Bernard Peritz, 457 Fifty-eighth street, Brooklyn, N. Y., directors.

Gardner, Mass.—Gardner Motor Car Co., under Maine laws, with $25,000. to conduct a garage and repair business, and sell, let and buy automobiles. Corporators—Chas. Conielli, Boston, Mass.; William C. Wiggin, Percy G. Simpson, Henry A. Perkins, and Joseph P. Carney, Gardner, Mass.

New York City, N. Y.—Rosenfeld Machine Co., The, under New York laws, with $50,000 capital, to manufacture motors, dynamos and other machinery. Corporators—A. J. Beedenbender, Flushing, N. Y.; M. Rosenfeld, Van Nest, N. J.; A. C. Someracki, Nutley, N. J.; W. C. Zimmer, New York City, N. Y.

Peorians Buy St. Louis Property.

Under an order from E. S. Robinson, referee in bankruptcy, the machinery in the plant of the St. Louis Motor Car Co. at Peoria, Ill, and its unfinished product has been sold to Harry G. Finkelstein and Warren Kinsey, of Peoria, for the sum of $10,800. The new purchasers will enter into immediate possession and will conduct the factory until such a time as it can be profitably disposed of. With the plant and the machinery there are eight unfinished cars and thirty engines.

Recently the Jesse Frenches, who had been conducting the establishment, withdrew their claims of $60,000 against the company and it is expected that a dividend of 25 per cent. will be declared. There was a bid of $12,000 for the machinery and unfinished product presented by a Chicago concern, but later they failed to make good and the bid of Finkelstein and Kinsey was subsequently accepted. The building is still owned by Jesse French, Sr., and only the machinery with the material on hand is disposed of in this sale.

Stockholders Can't Escape Assessment.

The affairs of the bankrupt and long defunct Remington Automobile Co., of Utica, N. Y., continue to cause considerable litigation in the courts through the resistance of some of the stockholders against paying the assessments demanded by the trustee in bankruptcy. In the case of Henry R. Carpenter against Lotus N. Southworth, the trustee, where the action was brought to recover the amount of an assessment which it is now claimed the trustee demanded illegally of Carpenter, Judge Ray, at Utica, sustained the demurrer of the trustee which pointed out that Carpenter's complaint did not establish any adequate reason why he should not be compelled to pay the assessment exacted of him. The Remington affairs have been in the courts for many years. The stockholders have fought every effort to make them disgorge, but this last decision seems a knockout blow.

Rivalry in "Rubberneck" Trade.

A split in the "rubberneck wagon" business of Denver, Col., has resulted in the formation of the Viewing Denver Auto Rental Co. to go into competition with the Seeing Denver Automobile Co. The organizers of the new company, all of whom were formerly connected with the old company, are George Stevenson, psesident; W. G. Cole, secretary and treasurer; H. T. Kessler, general passenger agent; and J. R. Howe and L. R. Slater.

Franklin to Bring Out a New Brougham.

In addition to the town car which it already is producing, the H. H. Franklin Mfg. Co. has under way one of the brougham type, with the steering wheel and control enclosed in the body of the car. It will be of 16 horsepower, will have a wheel base of 92 inches, and will tip the scales at about 1,700 pounds. It will be listed at $2,300.

Offer for Pope's Syracuse Property.

E. C. Stearns & Co., who, under lease from the Pope Mfg. Co., for several years have occupied a factory building in Syracuse, N. Y., have made an offer of $25,000 for the property. The Pope receivers have recommended its acceptance and applied to the courts for authority to make the sale.

Judgment Against Trident Tire Co.

Judgement for $1,890 in favor of the Standard Welding Co., Cleveland, has been entered in the New York courts against the Trident Tire Co. The latter concern started with something of a rush about a year since but for the past few months has been at a complete standstill.

IN THE RETAIL WORLD.

George J. Dunham, 182 Columbus avenue, has taken the Boston agency for Corbin cars. The local store of the Corbin Motor Vehicle Corporation has been discontinued.

The Panhard & Levassor Co., has established a branch in Boston, with George T. Gould as manager. The salesrooms are at 901 Boylston street, lately occupied by the Shawmut company.

The Santa Rosa Cycle Co., will shortly build a large fireproof garage and salesrooms at Santa Rosa, Cal., and change its name to the Santa Rosa Garage Co. This as a result of taking the agency for the White.

E. Whipple has purchased the interests of C. S. Matthews in the Matthews Auto Supply Co., 514-516 Jackson avenue, Topeka, Kan. As a result of the purchase the concern will change its name to the Cowdrey-Whipple Auto & Supply Co., J. R. Cowdrey being the other member of the firm.

George H. Phelps, formerly agent for Corbin cars in Worcester county, and E. L. Sanford, formerly manager of the Harrington Auto Station at Worcester, Mass., have purchased that concern and after making extensive alterations, will occupy its garage. The new business will be incorporated as the Harrington Garage Co.

The Gardner Motor Car Co., which has incorporated under Maine laws, with $25,000 capital, will establish a garage in the old St. Paul church building at Gardner, Mass., which is being remodeled for the purpose. Charles Coninelli, of Boston, William C. Wiggin, Percy G. Simpson, Henry A. Perkins and Joseph P. Carney, of Gardner, are named as the corporators.

Dealers Get Together Again.

The National Retail Dealers' Association, the existence of which had been forgotten by practically every one who had ever heard of it, held a meeting during the Chicago show and reorganized itself with C. F. Jensen, of Joliet, Ill., as president; R. Hokanson, Madison, Wis., vice-president; J. A. Crum, Oshkosh, Wis., secretary, and L. Ohnhaus. of Fort Wayne, Ind., treasurer. As stated by President Jensen, the object of the association is "to prevent the sale of automobiles by agencies which are subsequently not in a position to take care of their customers through want of proper equipment or through lack of practical knowledge." Firms of the "fly-by-night" order are also to be fought.

Newark Plans a February Show.

By co-operating with the local club, the Automobile Trade Association of Newark, N. J., has arranged for an automobile show to be held during the latter part of February. Plans for an elaborate affair are being made. It is estimated that there will be at least 40 exhibitors.

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21½ Per Cent

MIDGLEY

of all cars shown at the Madison Square Garden Show were equipped with

Midgley Universal Rims

and

38 Per Cent

of all detachable rims on cars in this Show were

Midgley Universal Rims

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MIDGLEY

The Midgley Manufacturing Co., Columbus Ohio

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Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, Pres. R. G. Betts, Treas.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

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Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

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To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, DECEMBER 12, 1907

One of the Extravagances.

After the readjustment of affairs that is now in progress in the industry shall have been completed, it probably will be discovered that not a few men connected with automobile factories who had been accustomed to going about in motor cars, will have returned to street car travel.

For to say the least, it simply has been amazing not merely how many officials, but how many department heads and superintendents and first and second assistant superintendants of some factories have enjoyed the free and unlimited use of cars from one year's end to the other, and not infrequently of the services of a factory employee in the capacity of driver. In some instances it is a conservative estimate that from $25,000 to $50,000 has been represented by property usage of the sort.

Of course, there are sound reasons why some of these men should make frequent use of cars, but the wonder is why some of the men in comparatively modest positions have been permitted to possess them as if they were their very own, for their own pleasure and the pleasure of their families and friends.

In stopping the leaks and reducing the extravagances that have existed, it is certain that this feature of the business must receive attention.

Serviceability of the Wind Shield.

Considering the comparatively short time which has elapsed since they first came into use and the very obvious dangers attendant upon accidental fractures, it is somewhat surprising to observe how rapidly and completely the glass wind shield has gained its hold upon the public. At the same time, considering also the comparative simplicity of the idea, it is not a little surprising to note the amount of variety both in design and execution which has been achieved.

When first placed on view at Madison Square Garden several years ago, the two or three screens then in existence were looked upon with mingled scorn and distrust. In the first place the average driver of the day felt secure enough in his goggles and was certain that no great benefit could be derived from the use of a shelter to any portion of his anatomy except his eyes. Besides, there was the danger from flying glass, and it seemed almost certain that the glass would shatter whenever the car was badly jolted, let alone wrecked.

At the present time hardly a car of any pretentions is made but has its wind shield. In most cases, to be sure, it is still a plain fence, constructed without regard to the laws of displacement, but there are numerous and very encouraging exceptions to the rule, in which some attempt is made to deflect the air upward with the least possible resistance to motion, thus at once reducing the windage load upon the motor, and also removing the obstructing screen from the direct path of the chauffeur's vision. In at least one instance recently observed, the upper leaf of the folding protection was made in double form, one section being of glass and the other of very fine brass wire gauze, the two being interchangeable. The use of the gauze in cutting down the wind as well as in excluding dust to a certain extent, without at the same time presenting any possible surface for reflection or refraction of light, constitutes an evident advantage, and one sufficiently great to have inspired the equipment of an entire screen in this way in one or two other cases.

With the present popularity of the overpowered car, there is little likelihood that the additional work required to propel a machine against a head wind when carrying from three to five square feet of otherwise useless dead flat surface at its fore end will be considered of material significance. With cars of lower power proportionately, however, the effect is of more consequence, and it is not at all unlikely that in this way the design of devices which, while offering as good protection to the driver, yet present less resistance to motion, may ultimately come into popular use. Certainly there is no longer a question as to the desirability of such an arrangement, nor any doubt as to the utility and general serviceability of glass for the purpose.

Garage Success and Failure.

While many things contribute to the success or failure of garage keeping, undoubtedly the chief factor for better or worse is the treatment accorded patrons. The care and repair of motor cars involves so many possible causes of friction between the two parties to the contract that more tact and diplomacy is required than generally is considered to be the case.

In too many instances, if they possess the necessary tact, the garage keeper or his manager affect a degree of aloofness. They confine themselves too much to their offices. They do not seek really to become acquainted with their patrons or to earn their good will. They leave too much to the men in overalls, to whom the "cultivation" of customers is a thing apart. The man in overalls may be perfectly able to understand the language and temperament of chauffeurs, but when he is required to deal with the latter's employers, particularly when a difficulty of any sort has arisen, he is unequal to the task and too often serves only to make matters worse. On the other hand, the man in overalls who is permitted too much sway in this respect can constitute a leak which will carry away no small profit in the course of a season. He is a wise garageman who knows when not to charge for tightening a nut or a bolt, but the employee who is working for his own pocket, i. e., for tips, deserves a watchful eye.

Next to discourteous or indifferent treat-

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civilization reaches. Contests rapidly are losing their value as trade stimulants. Reputations no longer are made in an hour. Most of them already have been established and now it well may be doubted if victory in the greatest contest that may be promoted will profit the makers of the victorious car to the extent of a dozen sales that might not have been made without the expense of such victory. It is only the new or unknown car which now can profit much from success of the sort. There are a number of the importers and a few of the domestic makers who still harbor delusions on the subject and who fancy that a big race greatly will assist the sale of their goods, but they are due for an awakening. From the manufacturer's standpoint, automobiling as a sport has seen its best day. It has proved its usefulness, and its returns now must be limited in its scope. But without racing and the other elements of sport, the industry and its product probably would be five years behind what it is to-day, Horseless Ages to the contrary notwithstanding.

As they run on wheels and are capable of speed, there probably always will exist automobile sport in some form, but it will be sport for sport's sake, and not for the benefit of business. Some of the manufacturers may engage in it—most of them are possessed of red blood—and if they do so, it certainly will not injure their interests even if it fails to do them any great good.

The Short Cut to Peace.

It really seems about time that Mr. W. J. Morgan and the American Automobile Association "got together." Friends of both sides should seek to bridge the wide chasm. For many dreary weeks, Mr. Morgan, who has a New York evening newspaper at some portion of his back, that is, when he is not promoting sandfests in Florida or mountain climbs in New Hampshire, has been uppercutting the A. A. A. until it should be, even if it is not, dizzy. He has been tearing the presidential policies to tatters, hammering hard at the treasury and pin-pricking the Racing Board in a manner truly awful.

It all seems very foolish when the way to prevent it is so clear and so simple, and when the way to place the A. A. A. far, far above criticism and reproach is equally plain. Why do not the officials of the A. A. A. resign or otherwise "chase themselves"? With the field unobstructed, it then would be possible to make up a ticket that would spell satisfaction, not only from top to bottom, but crosswise as well, as follows:

For President.
W. J. Morgan.
For Secretary.
Will J. Morgan.
For Treasurer.
William J. Morgan.

After election, President Morgan very readily could appoint Private Morgan chairman of the Racing Board, and of the other important committees, and the four or five ply chairman should be left free to select his fellow committeemen. In this way, there would be left no room for dissent or dispute. Everything would be perfectly lovely.

Mr. Morgan is a man of travel and experience which encompasses the better part of two hemispheres and though he does not plaster his hair on both sides of his forehead, he has every other necessary qualification. Seriously speaking, he is far-seeing enough to discern that the greatest lasting strength of an organization lies in individual membership and as secretary he could guide the A. A. A. in that direction; as treasurer, he could see to it that no guilty dollar escapes, while as President he certainly could talk as much about "freeing slaves" as President Hotchkiss has talked and do as little toward freeing them. But in his capacity as chairman of the Racing Board he could fairly scintillate True, he partly overlook those "two best bets," the Metropolitan Automobile Association and the "Automobile Manufacturers' Committee" and selected a New York club to run his hotel's speed carnival in far off Florida, but that is merely an incident Generally speaking, he knows all the ins and outs of every phase of the racing game. He's been there before many a time and oft. He is a professional, but that is his misfortune. For he became one merely because he raced for cash and against other professionals, which the A. A. A. with assinine graciousness says a man may do and yet remain an amateur—under its rules. Morgan's misfortune was in being born too soon. He probably would find it a horrible job in distinguishing an A. A. A. amateur from an A. A. A. professional, but he certainly could do so as acceptably as is now done by Jefferson DeMont Thompson or W. K. Vanderbilt, Jr., and as it is, he has done his best by including in the program of the Florida sandfest an event for "gentleman amateurs," which term, as nearly as can be made out, is the equivalent of "professional gentlemen," which is in the nature of offsetting the A. A. A. shamateur and adding to Morgan's qualifications for A. A. A. office. Be that as it may, let us have peace —and Morgan.

To Reach the Highest Plane.

One of the most significant points developed in connection with the report of the Watson experiments, recorded in another column, is contained in the final conclusion in which the investigator observes "that the question as to what kind of spark is best, involves not only the position of the sparking plug, but also the peculiarities of the carburetter and method adopted to throttle the engine." This emphasizes the relationship between cylinder and carburetter design—as, in fact, between all portions of the motor—and shows the difficulty of segregating them. Not until each function of the motor may be isolated from all others and studied absolutely alone, can it be hoped to reach the highest plane of development in gas engineering.

As showing how true this is it is sufficient to indicate that the results of carburetter experiments, hitherto supposed to have been relatively absolute in their nature, must have been affected to a greater or less degree by the relative efficiency of the ignition system employed. Two motors put through the same test develop different results, simply because one may have its ignitors located in a pocket at one side of the combustion chamber while the other mounts them in the center of the cylinder heads. Yet in testing for the best position of the ignitors, on the other hand, the results are more or less complicated by the uncertainty of the carburation. Similarly, experiments with methods of control, lubrication, balance, and all other of the more vital points of construction, are subject to embarrassment through lack of proper standardization of conditions.

Of necessity, the development of the internal combustion motor has proceeded by a process of counter-checking and interdependent correction first of errors in one quarter, and then of those in another. The time has passed when this condition is absolutely requisite, however. It now is possible to create conditions in nearly every part of the motor which, if not absolutely standard, are at least sufficiently constant to steady the results of investigations in other lines.

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CORRESPONDENCE

Owen's Opinion of the Chicago Run.

Editor of The Motor World:

It is very evident to me, after looking over your account of the reliability run in Chicago, that whoever reported this did not take the trouble to look into matters as they should, or had some favorite to play. I have been in a great many so-called reliability runs, and I consider this one the most fair to all concerned, that it has ever been my pleasure or misfortune, whichever you may consider it, to be in.

I notice several statements made by your reporter which are absolutely wrong. In one he says the lacing was chafed, when he should have taken the trouble to find out that the lacing was broken. Now if a broken lacing on a leather boot that covers some important part of the machinery comes off, it is not only a nasty job, but is sometimes a very important one to attend to, and it is one that most owners of a car would not care to do while on the road. It is, therefore, a good lesson to the manufacturer of a car, and should be a means of providing some other kind of lacing than a shoestring. If a red light falls out of a lamp it is liable to cause the arrest of the operator of the car, and should teach the lamp maker, through the criticisms of the purchaser of the lamps, to make his lamps more secure.

You make a statement that the Oldsmobile had a loose bolt on the drive shaft, inflicting six points This your reporter could have found out, was not so, had he taken the trouble to ask a question of the gentlemanly committee. The real facts are, there was a loose band that holds the leather boot on the universal, which does not mean much in itself, but, as in the case of a broken shoestring, it is a mean thing to get at on the road, and as regards the hair-splitting, and things of that kind, I consider that the committee did their absolute duty, as laid down by the rules accepted by the entrants of cars, and as far as there being nine dissatisfied survivors, and myself being one of the survivors, I beg to differ with you, and will also make a statement which I think can be very easily verified, that there is possibly not more than one or two dissatisfied survivors, a fact which your reporter might have found out, had he made an inquiry.

I have talked with most of the contestants, and the majority are more than satisfied with the results. The car that did not make a perfect running score could not have had a very competent driver, as the running schedule was very easy, and there was no occasion to drive any car fast enough to smash things up generally. The man who won this contest deserved all he got, because he followed the rules, and knew the penalties of loose parts and broken ones. He saw to it that all parts were tightened on his car, and he drove it as a car should be driven.

The only criticism that I would make for a run of this kind, would be that the committee should select the cars for a contest of this kind, and pick them up in any town or salesroom, shipping them to the point of starting, and the maintenance to replace cars so taken by new ones. When a dealer receives an automobile from a manufacturer, it is supposed to be ready to deliver to the customer, and if it is necessary to spend three or four days or as many weeks tightening up bolts, nuts, lamps, horns, speedometers, and other equipment, it is very evident that the car is not in condition to sell when received by the dealer, and to get a good, fair and square deal all around, the car should not be allowed to have experts spend three or four days on them before entering the contest. The rules of the Chicago Motor Club did not prohibit a car being prepared for the contest, and the ones that prepared their cars are the ones that made a showing.

I trust you will pardon this lengthy letter, criticizing your article, but I am stating the facts as they appear to me, and as I am quite sure they appeal to a great many dealers as well as manufacturers.

RALPH R. OWEN,
Cleveland, Ohio.

Jeffery Justifies His Position.

Editor of The Motor World:

In view of our having protested the decision of the technical committee making the awards in the recent 600 mile sealed bonnet reliability run of the Chicago Motor Club, we feel it only fair to state our reasons for such protest.

This run was undoubtedly the most severe official test of motor vehicles ever made, and in the words of one of the judges every effort was made to avoid perfect scores. In fact, these efforts were carried far beyond essential features, and though several cars made every control on time and finshed in apparently perfect condition with all seals intact, they were deprived of a final perfect score merely on account of inessentials or accessories.

In our own case the heaviest penalty, four points, was inflicted on account of a tail light, palpably broken by impact and in all probability by another car while the contesting cars were being moved in or out of the official garage, as neither the observer or the passenger in the rumble seat was aware of its being done, as they undoubtedly would have been had the damage been done while the car was in service.

Under the circumstances we felt it unfair to attach a stigma to our car on account of damage to an unimportant accessory from outside forces over which we had no control and in which no weakness on the part of the car or accessory was even contributory.

We also protested the decision covering our primary or pedal brake.

In our judgment, based on several years' experience in automobile manufacture, it is inadvisable to so adjust this brake that by sudden or injudicious application the wheels may be locked and great and unnecessary damage be done the tires. This brake is, however, in its present condition and adjustment sufficiently effective to stop the car within 50 feet with the car traveling at 20 miles per hour, at the instant of application, as was proven by several tests on various pavements. In fact, the judges admitted that the question was merely one of adjustment and based the penalty of two points on the fact that but one minute or less would be required to adjust the brake to meet the requirements.

Should instant stop be required in case of emergency, so great that effect on tires is of no consideration, a second brake is provided that will instantly lock the wheels at any reasonable speed.

We felt that as no notice to the contrary had been given the matter of brake adjustment was within our discretion and protested the penalty, but the referee held to the contrary and sustained the decision of the judges.

We deeply regret the conditions that impelled us to enter protest against the judgment of the committee and offer this statement only in order to acquaint the public with our position.

THOMAS B. JEFFERY & CO.,
Thos. B. Jeffery.

Haynes Tells of Pioneer Work.

Editor of The Motor World:

I notice in your issue of December 7 a statement to the effect that the first car built in Kokomo was designed and constructed by the Apperson Bros. at the Riverside Mch. Works, the writer merely furnishing the necessary money for doing the work. This article claims that the writer first obtained his idea of a horseless carriage when he visited the World's Fair in Chicago, in 1893, having seen a Sturgis electrical machine; it is true that the writer attended the Chicago World's Fair at that time, but I did not see the Sturgis machine or any other horseless carriage. The first carriage I saw of this description was built according to my own designs at the Riverside Mch. Works, of Kokomo, Ind. I was led to consider the matter quite seriously by my experience in the natural gas fields of Indiana, where I was obliged to take almost daily long drives through the country.

When at Portland, Ind., 1889, I first considered the construction of a steam machine, but did not give the matter very serious consideration. Soon after moving to Greentown, Ind., in 1890, I wrote to the Scientific American and asked them what form of power they would consider best for driving a horseless carriage; they replied that steam was the best power to use.

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I wrote to the Chloride Accumulator Co., of Philadelphia, about the same time or a little later, asking them what was the lightest possible weight of storage battery which they could produce which would be capable of giving 1 horsepower continuously for ten hours, or 2½ horsepower continuously for four hours; their reply was that a battery of this capacity would weigh 1,280 pounds. I realized at once that electricity would be entirely impracticable for the desired purpose. Soon after this I wrote to a number of gasolene engine builders, but found that the engines produced were nearly all entirely unsuitable for the purpose. Finally I wrote to the Sintz Gasolene Engine Co., of Grand Rapids, Mich., and later purchased one of their motors. I did not purchase the engine, however, until after moving to Kokomo, as there was no machine shop in Greentown and the work could not be performed there.

Soon after moving to Kokomo, I made some preliminary experiments on road traction in order to determine what power would be necessary to drive a carriage of a given weight. I decided that something on the order of bicycle construction, but much heavier, would afford the best results so far as road traction and low power requirements were concerned; I therefore had a man mount a bicycle and place his feet on the coasters. The bicycle was then attached to the rear of a light buckboard by means of a cord and spring scales, and a man was seated on the rear of the buckboard who was provided with paper and pencil; he recorded as rapidly as possible the draw bar pull shown by the spring scale. It was found that after the horse carriage got fairly under way, going at the rate of about ten miles per hour, the pull on the scale was measurably constant. The road over which the test was made was nearly level and quite smooth. After going a certain distance the buckboard was turned around and driven back over the same course and the record repeated. These figures were then added together and divided by the number of records, which of course gave the average pull approximately required to draw the bicycle, which with its rider, weighed 210 pounds. From the data secured in the above manner, I was able to determine approximately at least, what power would be required at the wheel rims to drive a machine weighing say 500 pounds.

Soon after making this test in 1893, the gas engine arrived from the Sintz Engine Co., and I made a number of brake tests on this motor, which was of the upright, two cycle type, rated at 1 horsepower. I soon discovered that the vibration of the motor was very great, and decided therefore to make the machine considerably heavier than first intended. From this little motor I was able to get about nine pounds torque at the rim of a 12-inch fly wheel. With this data I was able to gear the motor in such a manner that it could produce the necessary torque at the wheel rims to drive the car over a level road at its best speed, and to climb very slight inclines on the lower gear. I accordingly designed the sprocket ratio in accordance with the requirements, and I remember distinctly that I was obliged to make use of some trigonometrical calculations in determining the pitch lines of these wheels The patterns were made in the north end of the city from these drawings, and the castings were afterward made from these patterns by the Pittsburg Steel Casting Co., of Pittsburg, Pa. I remember very distinctly that I asked the Casting company to run the carbon sufficiently high in the steel to admit of hardening the teeth of these sprockets.

The locality in which these tests were made is comparatively level, and except in certain rare instances it is unnecessary to have very large reduction of gear for climbing our grades. After completing the calculations for the car, I inquired carefully in regard to the best machine shop in the city for doing the work, and was advised to have it done at the Apperson shop, since the work could there be done under closed doors. I accordingly made known my plans to Mr. Elmer Apperson, and he consented to undertake the work of building the car. As I remember it, some slight modifications were made in the original plan from time to time as the work progressed, but in the main everything was carried out as originally intended. So far as the specific design of the car is concerned, I do not claim any particular merit for it, and so far as the workmanship on it went, it was about of the usual character generally done in any good shop. Several different workmen took part in the construction of the car, but as I remember it the car was entirely completed before Mr. Maxwell was employed at the Riverside works; this gentleman came later, however, and was of material assistance to the writer and Mr. Apperson in designing and building future cars.

After the car was completed at the machine works or at any rate ready for road trial, it was taken to the country and started, as not a man having anything to do with it had ever even seen anything of the kind before. The car was started on a good pike about three or four miles from Kokomo, and ran about 1½ miles further out from the city, when it was purposely stopped, turned around, and headed for home. As the writer remembers it, the car ran all the way in without a single stop, except that in crossing the gutter just before reaching the machine shop it was unable to pull up over the curbing and the motor ceased running. The car made a speed of about seven or eight miles per hour on its journey in from the country, which was about all that could be expected since the car weighed with its passengers, over 1,000 pounds. This motor was afterwards replaced by a 2 horsepower, and the wheels were increased in size to 36 inches in diameter and provided with pneumatic tires; the speed of the car was thus increased to a maximum of about fourteen miles per hour. The best record I succeeded in making with it was five miles in 26 minutes, or an average of about twelve miles an hour.

THE HAYNES ANTOMOBILE CO.
Elwood Haynes, Pres.

Wound up Its Affairs Without Loss.

Generally speaking when a corporation reaches a point where it becomes necessary to "wind up" its affairs, the stockholders may rest assured their profit taking is at an end. Such proved not to be the case in the exceptional instance of the Torquay Motor-bus Co., of London, however, which recently got to the end of its rope. Contrary to precedent, the whole of the paid-up capital was returned to the stockholders, after the payment of a dividend of 7½ per cent. from the commencement of operations, in addition to which a bonus of upwards of 8½ per cent. remained to be disposed of. The decision to close out was the result of an anticipation of coming competition on the part of the electric "trams," and the business was terminated in season to prevent any losses to the company as a result of it. The 'buses which had been in use, were immediately turned over to another company and put into service at once at Harrogate.

Foreign Car Improved by American Parts.

An example of the superiority of the American cars over those of foreign manufacture was recently emphasized by an incident in New York. A Wall street man had purchased a very expensive foreign car, but continually complained of the noise made by the side chain. Many remedies were tried with little or no effect. Finally he obtained from the E. R. Thomas Motor Co. a set of both wheel and countershaft sprockets and chains and had these fitted to his foreign machine, and he now claims that the machine makes no more noise than a shaft driven vehicle, and yet has the advantage of the double chain drive.

Prussian Railways Adopt Motor Cars.

Virtually a complete transformation in the State railroad system is about to be introduced in Prussia, according to cable reports. On all except the main trunk lines motor cars similar to those in use on the Union Pacific's interurban lines, will replace steam locomotives. Prolonged experiments have proved gasolene motor cars possess immense economic advantages. Several hundred of these cars have been ordered, it is stated, each provided with a sixty horsepower motor.

"The A B C of Electricity."

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

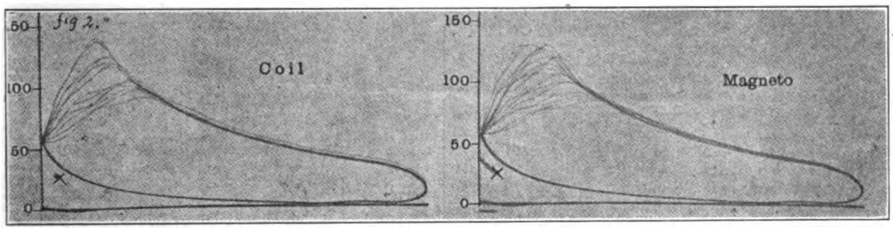
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CONDITIONS AFFECTING IGNITION

Some Recent Tests and What They Indicated—Comparative Action of the Magneto and the Spark Coil.

Prevailing impression to the contrary notwithstanding, there has been up to this time no definite and analytical proof that the magneto gives better service in use or produces more efficient results from a given volume of gas than does the more familiar spark coil. That it is generally more certain in action, that it is not subject to the same irregularities as the other system, and that it is otherwise advantageous is commonly believed. It has remained for Dr. W. Watson, the English investigator, however, to prove that the supremacy of the magneto for all ordinary service is really what it is claimed to be by many engineers.

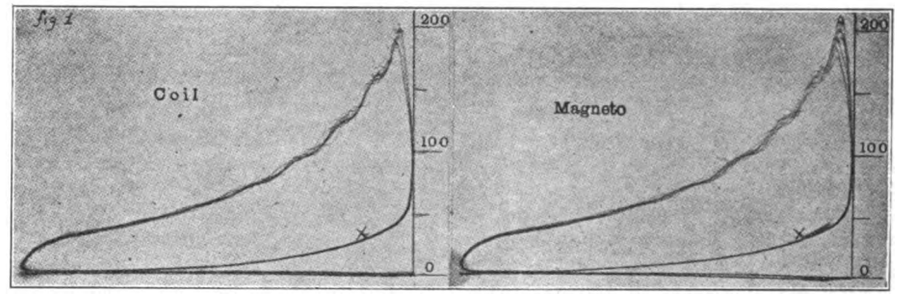
It was the same authority who, last winter in a paper read before the Royal Automobile Club announced the radical conclusion that the "fatness" of the spark had no effect upon the power developed by the explosion, the apparent loss of power in some cases observed when the spark was weakened, being due rather to the delay occasioned by the varying lag of the coil than by any variation in the quality of the ignition. At the time, considerable discussion was aroused, the paper in question being reported in brief in these columns in the issue of March 21, 1907.



The second series of tests was carried out with the same engine as was used in the first instance, that is to say, a twin cylinder affair with 3½ by 4-inch cylinders, the magneto and coil being so arranged that by means of a high tension switch the load might be shifted from one to the other instantly. The indicator employed was one of the optical type, of original design, and recording the cylinder pressures on a sensitized photographic plate, as may be done with the manograph. In every case, a "photograph of the spark" was taken on the plate, the exact instant of firing thus becoming a matter of automatic record with the diagram itself.

The earlier tests were made with the spark plug in its normal position over the inlet valve, both inlet and exhaust valves being located in a pocket at one side of the cylinder. The sparking points of the plug were 0.4 mm. apart, and running conditions were maintained uniform as nearly as possible in every case, the speed averaging about 900 revolutions per minute.

Two indicator diagrams, obtained when the best mixture of petrol and air was used, reproduced from the Autocar, are shown in Fig. 1, showing that there is no difference in the pressure developed, the timing of the two being so adjusted that both sparks



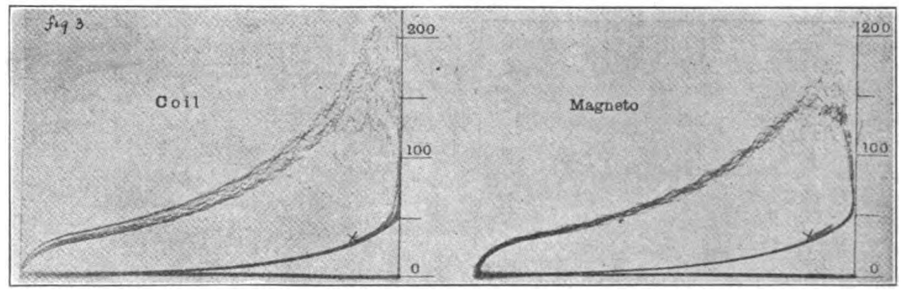
commence at the same point on the compression stroke. The small cross in all cases indicates the point at which the spark commenced.

In Fig. 2 are shown two corresponding diagrams in which the mixture used is so weak in petrol that any further dilution with air caused the mixture to fail to ignite whether coil or magneto was employed. Here, again, there is no difference. The small spark due to the coil is just as efficient as the large magneto spark.

By adjusting the indicator so that the spot of light was traveling at its maximum speed while the ignition was taking place and the piston was practically at rest, a method of studying the relative rates of flame propagation was developed. The diagram thus produced was distorted greatly, but for purposes of comparison it served excellently. In this way it was found that the velocity of flame propagation was the same both for weak and strong mixtures, and regardless of the intensity of the spark. It is interesting to note, however, that the interval which elapses between the passage of the spark and the first appreciable rise in pressure, due to ignition, is about 0.003 second for the strong mixture, and 0.0065 second for the weak.

"The above series of experiments simply confirm the results which the writer had previously obtained, using different intensities of sparks produced by coils, and they do not explain the marked improvement obtained by some observers when using a magneto," remarks Dr. Wilson. "The only probable explanation of the discrepancy seems to lie in the difference in the shape of the combustion space. . . . .

"Since it was not practicable to change the shape of the combustion chamber on the engine, the position of the spark plug was altered, which comes to very nearly the same thing as far as the question under consideration is concerned. A second spark plug was screwed into the hole provided for the compression cock, which is on the side of the cylinder opposite to the pockets containing the valves. At first the sparking points were placed so that they were in a hole ⅝ inch in diameter, and at a depth of one inch from the inside of the cylinder. A certain amount of to and fro movement of gas takes place past the points in this position, since the gases which move into and out of the indicator have to pass down the hole. By means of a switch the spark due either to the coil or the magneto could be caused to pass either through this spark plug or through the ordinary plug placed over the inlet valve.



"With the spark at the plug in the hole in the side of the cylinder, which may for short be called at the back of the cylinder, it was at once seen that there was a difference according as to whether a coil or magneto was used, i. e., as the intensity of the

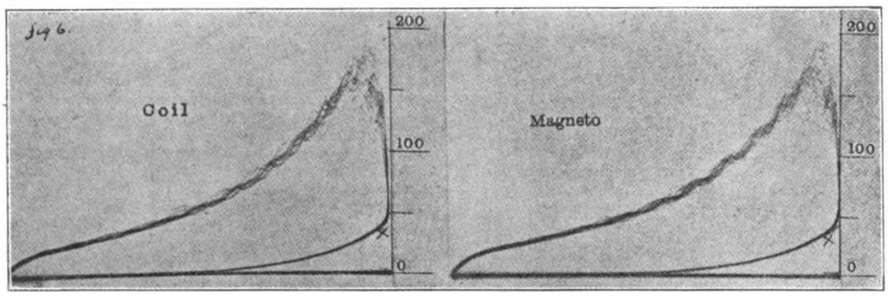
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spark was changed. In the case of the mixture of petrol and air giving the maximum pressure, the difference is illustrated in Fig. 3.

"In the case of the magneto the charge is fired quite regularly, and the work done in successive effective strokes is sensibly constant. With the coil, on the other hand, misfires are fairly frequent, and as each misfire is followed by a stroke in which, owing to scavenging, the quantity of charge is larger than usual, and hence the pressure developed is above the average, the work done in successive strokes varies considerably. . . . .

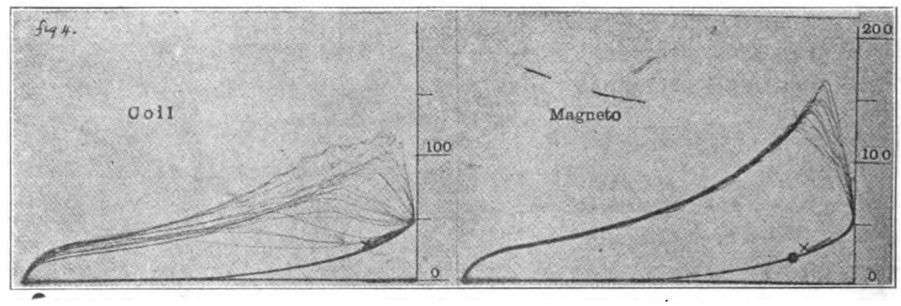
"With a weak mixture, Fig. 4, the difference between the effects of the two kinds of spark is even more marked.

"Since the spark plug at the bottom of a hole is not an arrangement likely to be used in practice, a new plug was made of such a length that the sparking points just reached to within the cylinder, and hence the arrangement was practically identical to what is used in some engines where no valve pockets are employed. In this case, with a strong mixture very little difference between the two kinds of spark was obtained, as will be seen from Fig. 6. Further, the rate of ignition was practically the same.



"With a weak mixture, however. there was still a marked difference obtained with the two kinds of spark, as is shown in Fig. 7, where it will be observed that the coil often failed to ignite the charge, and hence, owing to scavenging when an explosion did occur, the pressure produced was much above the average. These two diagrams illustrate very clearly a case where the magneto has a distinct advantage, for with the strength of mixture used the work done in the successive strokes does not vary to any serious extent, and hence the engine will run regularly. With the same strength of mixture, however, the engine runs very irregularly with the coil, as, owing to the misfires and strong explosions by which they are followed, the work done in successive strokes varies very greatly, and the engine thumps. In order to make the engine run regularly with the coil the mixture has to be stronger, and then the power developed is greater, so that the flexibility is reduced. . . . .

"In order to obtain some idea as to the relative 'fatness' of the spark an ordinary sparking plug was fitted into a small glass globe, an inclined water manometer being also attached to the globe, forming a Riess's thermometer. Thus when the spark passes the air in the globe is heated and the pressure of the air rises. The engine being run on one cylinder, the high tension current which ordinarily was used to fire the other cylinder was taken to the plug in the thermometer, and the movement of the surface of the water in the monometer during ten seconds was observed the engine being kept running at a constant speed. In this way it was found that the heat developed at the spark gap by the magneto was very nearly ten times the heat developed by the coil. The conclusions to which the above experiments point are as follows:

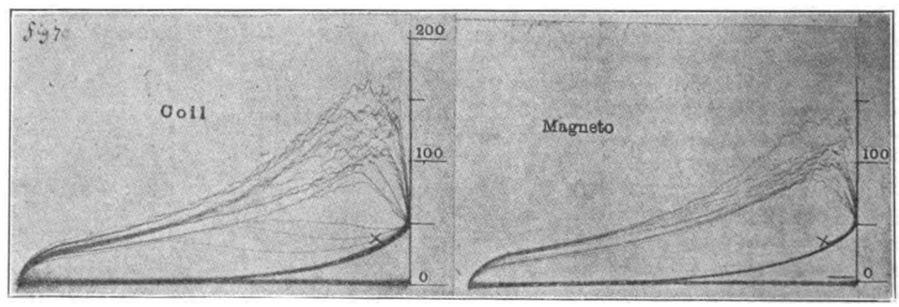


"1. With an engine in which the inlet valve is in a pocket and the spark occurs in this pocket, neither the pressure developed nor the rate at which the charge burns depends on the intensity of the spark or whether it is due to a coil or a high tension magneto.

"2. With an engine in which the spark occurs inside the combustion space over the piston there is very little difference as long as a mixture is used which does not depart much from that which gives the maximum pressure. With weak mixtures, however, there is a distinct advantage in using a very intense spark, such as is given by the ordinary magneto.

"3. The well known fact that an engine with the valves in pockets is more flexible than one without pockets is seen to depend on the fact that in the case of the engine with pockets the mixture in the neighborhood of the spark is stronger than the average. Hence the ignition of the charge is started in this stronger mixture, and once being started, spreads to the rest of the charge. Where no pockets are present the portion of the charge near to the point at which the spark occurs is no richer than the average, and hence the average richness must be at least equal to that of the richer portion of the charge in the engine with a pocket, or a misfire will occur.

"The above remarks apply to the case where the mixture is never too strong. If, however, closing the throttle caused the strength of the mixture to increase to such an extent as to be richer than the normal, then it was found that firing the charge over the inlet valve was a disadvantage, as greater flexibility was secured when the charge was fired in the combustion chamber. The reason being that, as has already been pointed out, the charge in the pocket is always richer than the average. Hence, if the average charge is already too rich, the charge in the neighborhood of the spark may be too rich to fire. It will thus be seen that the question as to what kind of spark is best involves not only the position of the sparking plug, but also the peculiarities of the carburetter and method adopted to throttle the engine.



"4. Finally, it seems probable that in most cases where improved running has been observed in the case of a multi-cylinder engine in particular, on the replacement of high tension coil ignition by high tension magneto ignition, the improvement is due to improved timing obtained owing to the replacement of the trembler coils by the make and break of the magneto."

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ADVANTAGES OF THE STUB-TOOTH

Its Economy of Wear and Constancy of Force in Gear Action — Principles Embodied in Its Design.

With the rapidly growing adoption of the so-called "stub-tooth" gear in motor car transmissions, considerable interest has been aroused in the system upon which it is based. Ordinarily it is sufficient to explain that the stub tooth is like any other tooth except that it is shorter, or that a 6-8 pitch pinion, has the same dimensions as the standard 6-pitch pinion, with a tooth of the length which would be used on a standard pinion of 8-pitch formation. The inexactitude of this explanation, however, is apt to be more or less confusing, besides which the mere idea of added strength which it conveys fails to carry all the advantage which the system actually possesses.

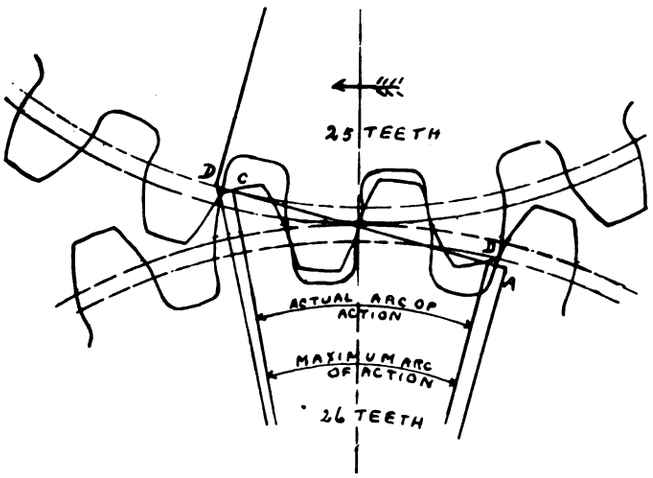


FIG. 1

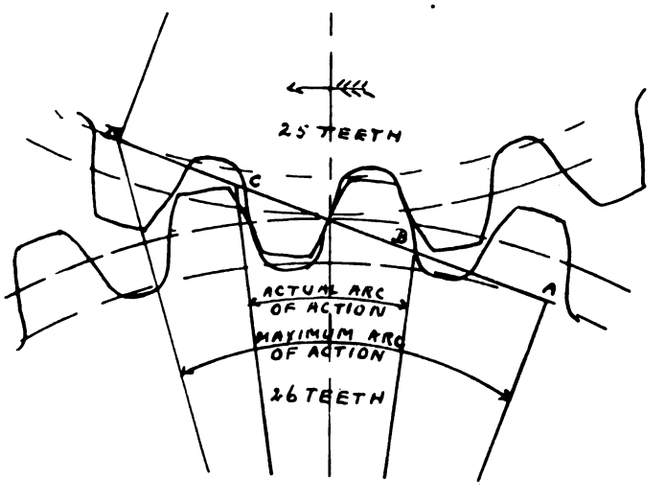


FIG. 2

In a very convincing monograph on the subject recently published by the Fellows Gear Shaper Co., the advantages brought out by stub-tooth design are explained by means of a number of diagrams. The following extracts are intended to bring out the points of excellence of the system without going into the more intricate theoretical details.

Regarding merely the ideal conditions, the following quotation comprehends the entire basis of gear design: "The two most important are the securing of the nearest approach to a rolling action that it is possible to obtain and the strongest tooth that will meet this condition. The first includes easy running, reduces the friction to the lowest point and consequently has the least wear in action. We are apt to think of the present standard gear tooth as one of the fixed laws of mechanics and that it represents the highest development possible in this line just as we consider the question of threads fixed by the Sellers or United States Standard form of thread. But this is not the case, and while there is always a perfectly justifiable reluctance about departing from such a standard as the gear tooth it is at least good policy to know both sides of the question and see if the advantages claimed for the newer form of tooth can be backed up with positive proof.

'The so-called standard tooth of to-day is the involute curve with the 14½ degree angle of obliquity or pressure angle, but its use is not as universal as might be supposed and the newer form known as the 'stub-tooth,' with its 20 degree pressure angle is growing into favor faster than many realize."

Going back into gear history a little, the author touches upon the earlier tooth shapes, of which he says: "The first that were worthy the name were of epicycloidal form and measured by circular pitch and, as the state of the mechanic arts had not advanced to the point of cutting teeth in a machine, the gears were in most cases made with cast teeth in the foundry. The rest were cast without teeth and these were made of wood and driven into the rim by the old-time millwright.

"With the epicycloidal system it was necessary in order to avoid the excessive under cutting of the flank of the tooth, to adopt certain proportions of form and length of tooth, which gave continuous action when the gear of 12 teeth was used. Proportions for the length of tooth and other dimensions that were originated when the science of applied mechanics was in its infancy have been handed down to the present time with little change, regardless of the fact that with the dropping of the epicycloidal form of tooth, the conditions have been entirely changed. . . . . The adoption of the involute form of tooth, together with the diametral pitch system of measurement, has been gradual but constant. and it has now practically superseded all other forms. . . . .

"With an interchangeable set of gears the length of the tooth should be sufficient to give an arc of action equal to the pitch arc, even with the smallest pinions. This will keep one pair of teeth in contact until the next pair is in position to take up the load. There is, therefore, a fixed relation between the length of tooth and the angle of obliquity. In ordinary practice the number of teeth of the pinion is limited to 12, and the length of the tooth ordinarily adopted is such that the action is continuous.

"It is, however, a fallacy to argue that the teeth should be as long as possible, with the idea that a gain is made if two or more pairs of teeth are in mesh at once. Conditions are never such that an equal division of the load is possible, and a length of tooth beyond that which is necessary to insure a continuity of action, produces undue friction and wear. The best results are obtained when the arc through which the action of a pair of teeth takes place is from 1¼ to 1½ times the pitch arc.

"Although the subject of gearing has been investigated and discussed at great length by many mechanics, there is one phase of the subject that has received but scant attention, and this is the co-relative effect of the angle of obliquity, or pressure angle, and the length of the tooth upon the efficiency and wearing qualities of the tooth itself. It can be shown that an excessive sliding action takes place at a certain portion of the tooth action between gears having teeth of the standard or 14½ degree angle, and that by increasing this angle it is possible to so shorten the tooth that only such portions of the curve are used as will give nearly a complete rolling action."

The accompanying figures, 1 and 2, show the respective outlines of the standard and stub-tooth contours, and also indicate their respective merits. Thus in Fig. 1, the actual arc of action, B-C, lying along the line of action which is pitched at 14½ degrees to a line drawn tangent to the pitch circles of the two gears at their point of contact, is seen to be much longer than the corresponding line, B-C in Fig. 2, while in this case, the difference between the actual and maximum arcs of contact is greater in the second than in the first instance.

Remembering that the ideal is to secure the mesh of the gears with the least possi-

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bl sliding and the closest possible approach to simple rolling, it is evident that as the arc of actual action increases, under the conditions shown in Fig. 1, the amount of sliding between the points and flanks of the teeth also must increase since in the first case the points of the gears are approaching each other more rapidly than in the second, even though in both cases the angular movement about their centres is the same.

In other words, where the arc of contact is long, the points and flanks of the teeth are subject to a greater amount of wear than where it is short. It is also true, that whereas in the first instance three pairs of teeth may be in contact at the same time, in the second only two pairs at the most may contact at once. This, however, is compensated for by another feature of the stub tooth, which is its great strength at the base. The difference then, is roughly, that of shifting the load from three points to two points, without altering the load-carrying power in either case, since it may be considered that practically an equivalent amount of metal is carried in either case.

Referring to the subject of the wear which must occur between the points and flanks of long-toothed gears, the author says: "The action of the standard tooth at the base line, is that of a stone boat being dragged over the ground while the action of the stub-tooth can be compared with the same stone boat mounted on wheels.

"It is, of course, impossible to entirely eliminate the wear between the teeth of gears working under a load. But if the wear can be evenly distributed over the entire working face of the tooth, the correct form of tooth is retained indefinitely and a worn out gear should, aside from excessive backlash, run as well as a new gear. . . . .

"Because of the fact that the tooth has been shortened and at the same time widened at its base, there is a very substantial gain in strength which in some cases amounts to nearly 100 per cent. and the fact that we can many times practically double the strength of a tooth is certainly worthy of serious consideration. . . . . It should also be noted that the gain in strength is greatest in the case of the smallest pinion, which is a very great advantage, for as a chain is no stronger than its weakest link, so a train of gears is no stronger than the teeth of its smallest pinion. This, in addition to the clearly demonstrated fact of easier running and reduced wear, should command careful consideration for the form of tooth here advocated. . . . ."

A comparison of the standard and stub-tooth systems made on the basis of strength alone shows that the latter, though much shorter, has 20 per cent, greater strength and that while the bearing surface "per tooth" is shorter, the total area of bearing surface is 6 per cent. greater.

Thus it appears that the stub-tooth is not merely a shortened tooth, but that it comprehends a structure altered from the regular standard tooth in two important ways. That is to say, that it is so constructed that the pressure angle between any pair of teeth in contact is greater than in the standard gear, and the width of the tooth at the base is greater. As a result of this, there is less wear at the points and flanks of the teeth, and the strength of the tooth is greatly increased. Although commonly mentioned as more or less of an innovation, the Fellows company point out that it is by no means the actual novelty it seems, having been first introduced by them in 1899, as they state.

Disadvantage of Racing the Motor.

While the motorist frequently is advised not to race his engine, the exact nature of the disadvantage is not uniformly understood. In the first place, running the engine at a speed greater than that for which it was designed, involves straining it excessively owing to the inertia of the parts and the tremendous vibration which this produces. More than this, however, excessive speed of revolution involves additional wear and may be compared to a certain amount of extra use.

Thus if the normal speed of the engine is 1,000 revolutions per minute, accelerating it to 1,200 revolutions, means that the crank shaft must turn over no less than 12,000 times more in the course of an hour than it would do at the normal rate of speed. This is equivalent to 12 minutes of extra running at the normal rate. Hence with even this moderate acceleration continued uniformly, it may be said that for every five hours of running, the motor parts receive an amount of wear equivalent to that of six hours under more nearly standard conditions. In this way it is very easy to account for the comparatively short life of many motors.

Roughly speaking, there should be no reason why the motor should not be run at any speed which happens to suit the convenience of the operator, so long as sufficient power can be developed. But the fact that the rigid conditions of design compel the adoption of systems of balance based on certain fixed speeds, which thus become the "normal" rates at which the best efficiency and power are secured, makes it imperative that however much the engine may be below or above the requirements of the car, it should never be permitted to exceed its rated speed for any length of time.

When a Built-up Steering Knuckle Fails.

Occasionally an apparent distorsion in a built-up steering knuckle, resulting in the disalignment of the front wheels, may be due to the shearing of the key holding the steering arm in the knuckle, and not to the bending of the arm, as appears to be the case. On this account, whenever the system is found to be out of line, the condition of this member should be examined with extreme care. If the failure is due to no apparent cause, it may be taken for granted that the original key is too light for its work, and the part should then be reinforced by adding another, besides reseating the old one. In doing this, however, care should be taken not to weaken either part any more than is necessary.

Comparison of Power Ratings

There has been a decided change in recent years among American automobile manufacturers in regard to power rating. While a few years ago the foreign rating was considerably lower than the American, the same cannot be said to-day of the better class of American cars. An instance of this is shown by a comparison of the ratings in a table compiled by "L'Auto" of Paris, showing the details of some of the high grade six-cylinder motors at this year's Paris show, and the rating of the Thomas 6-70 Special as an example of the highest grade American car. "L'Auto" lists but one car of as large a cylinder bore as the Thomas Six and gives that car a rating of 75 catalogue horsepower. At the same time it lists a car of 120 mm. bore at 70, one of 130 mm. at 75-80, one of 130 mm. at 75, and one well known German car of 120 mm. bore at 75. The Thomas has a bore of 5½ inches or 139 7-10 mm., and the makers give this car a rating of 70 horsepower, thus showing that they are really more conservative in their rating than European makers

Keeping Truss Rods in Position.

It is important to bear in mind that truss rods used in staying live rear axles must retain their proper position if the alignment of the axle as well as its endurance are expected to come up to specifications. On this account these members should be inspected occasionally, and their adjusting nuts taken up in case any sag is observed in the casing. In doing this, care should be taken to exert a uniform degree of pressure on both sides, so as not to stress the casing unevenly or warp it. In case of an accident in which one of the stays becomes kinked, of course the whole group should be gone over with extreme care, the bent member straightened out and the alignment of the tube and shaft bearings readjusted if it is found not to be true.

Causes of Stiffness in Steering Gear.

Any unnatural stiffness in the steering gear should be sufficient cause for an immediate investigation. In some cases it may be produced by lack of proper lubrication in the knuckles, or by a similar difficulty in the reducing gear. In others it may be due to some more serious cause, like the bending of the steering column, causing the shaft to bind, or some loss of adjustment whereby the gears do not mesh properly. In any case, it usually happens that the remedy is a simple one and quickly applied. Prompt correction of the difficulty, however, may be the means of saving the owners' life.

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SUCCESS OF THE TAXICAB SERVICE

Rapid Increase of These Vehicles in New York City—Why, as yet, All are of Foreign Make.

No transportation innovation of recent years has attracted more attention on the part of the public and the trade than the "taxicabs" or "taxacabs," as they are variously spelled, which are now to be seen in great numbers on New York's streets.

To the public they are giving a realization of cheaper cab fares; to the automobile manufacturers they suggest new business opportunities, and to a host of drivers they represent a chance to earn money at a rate previously thought of only in their dreams. In fact the taxicab may be said to have taken New York by storm, and the probability that it will soon be conquering other cities in much the same fashion lends an interest to the problems that the operating companies have so far encountered in making it a paying proposition during their comparatively brief experience with it.

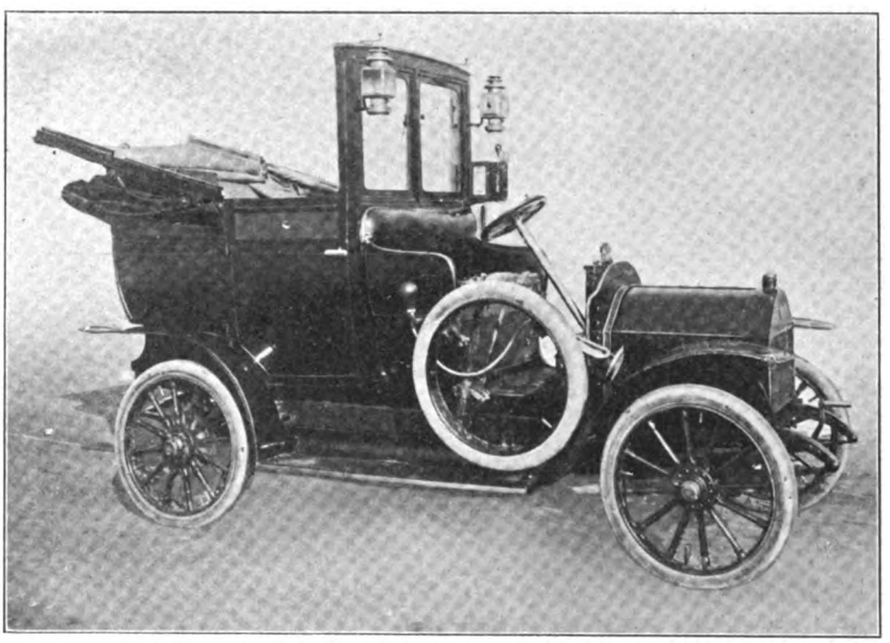
Two rival companies operate gasolene taxicabs in New York. The taxicab as a settled fixture in New York was introduced only so recently as September 30, 1907, by the New York Taxicab Co., and about the same time the New York Transportation Co., which has for years been operating the electric cabs, disclosed a number of gasolene cars fitted with taximeters. All of the gasolene cabs are imported from France, the Taxicab Co. employing four cylinder Darracqs and the Transportation Co. using two cylinder Delahayes.

The Taxicab Co. has at the present time about 250 of the natty, red Darracqs in service, and is getting about 75 more per month from abroad. The green Delahayes of the Transportation Co. are fewer in number, about 50 of them being in service at present, but it is understood that a large, further order has been placed and that they will soon be plentiful. Recently, the electric cabs have been equipped with the self-indicating and self-registering taximeters, and rapidly are losing their old designation "hansom" in favor of the more modern term "taxicab."

Officials of both companies agree that no American manufacturers are as yet prepared to make satisfactory quantity deliveries of suitable cabs, and intimate that the American makers have been in no little degree short-sighted in not making greater preparations for a class of business that bore unmistakable signs of inevitability.

"Much as we would like to patronize American manufacturers," said President Harry N. Allen, of the New York Taxicab Co., when asked concerning such heavy purchases abroad, "we could not take the risk of buying untried cabs even if the local makers were in a position to deliver the quantities required. It is altogether too dangerous from a business standpoint to take the risk of buying cabs that might not stand up under the hard usage we would give them. Before buying the cars we are now using, we tested several of them for as much as two years and had the benefit of seeing them in actual service in large quantities for an extended period. Every American cab offered to us so far has been purely an experimental affair, with no record of actual performance behind it.

"Just think of it," Allen continued, "a great many of our cabs go between eighty and ninety miles a day right along, without repairs of any kind and in the hands of all kinds of drivers. When American makers can show us actual records of that kind, then we will be ready to talk about buying."



FOUR CYLINDER TAXICAB EMPLOYED BY THE NEW YORK TAXICAB CO.

Secretary Palmer, of the New York Transportation Co., likewise felt that his company could do better abroad, in getting cars that had proved themselves suitable for taxicab service, than in placing orders for large quantities of American cars that had yet to prove themselves capable of meeting the peculiar conditions of cab work.

Although built abroad, President Allen does not find that the French products are in any way unsuited to New York's streets. Outside of the cities they would be under a great disadvantage compared with American cars, he admits, but metropolitan service is about the same in Europe and America.

"In fact," he said, "the physical conditions in New York are in many respects better than they are in either Paris or London, and we have no reason to anticipate that repair or maintenance charges will be any higher here than they are with the same vehicles abroad. The earning power of the cabs has exceeded what we originally calculated on, and we have reached a stage where we know positively that our venture is a success. Of course, there is a great deal more to the business than merely getting the cabs. It is in the management of them after you have them that the real test comes. By getting the exclusive stand privileges at some of the most desirable points in New York we have managed to organize a system which insures the cabs having fares and being kept busy practically all of the time, which is the secret of their success. It was in getting the stands that we wanted we met all sorts of trouble and difficulty, but now that we have shown what we can do we are making new conquests every day. For instance, this week we start in to supply the cab service for the New York terminal of the Lackawanna railroad, and shall announce further victories before long."

Among the more prominent of the Taxicab stands are the Plaza Hotel, the Knickerbocker, the St. Regis, the Calumet Club, the Racquet and Tennis Club, Bretton Hall, the Manhattan Hotel, the Delaware & Lackawanna station, and the Pennsylvania railroad terminals. The New York Transportation Co. also has a number of prominent stands, including Martin's and other fashionable restaurants, and various hotels and depots, where their gasolene taxicabs are in line with their electric cabs, of which many are now fitted with taximeters.

Both companies arrange the movements of their cabs to minimize their traveling empty on return trips. Returning without paying passengers is a waste that is the bugbear of the traffic manager. The New York Taxicab Co. has its drivers drop in at their nearest stand on a return trip, where the starter at the stand will put

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them into line if they are not needed more urgently at some of the other stands. All of the stands are in constant communication with the central office, so that the distribution is made to the best advantage. A cab taking a "fare" from the Lackawanna station, which is pretty far downtown, to some point away uptown, instead of returning empty all the way back to the station, would stop at the Bretton Hall stan the furthest of the uptown stands, where it would be ready to take passengers downtown on call, while, similarly, cabs going to the railroad station from Bretton I. would remain there for uptown "fares."

The same general principle is employed by the New York Transportation Co., so far as its system of stands will permit, but the management goes a step further in reducing the empty traveling. Through newspaper advertisements the public is urged to hail their cabs "whenever the flag is up," which means whenever the taximeter displays the sign "Vacant" on the little metal flag, which controls its operation. The men are encouraged to "pick up" fares on their return trips as far as possible, and a system of bonuses for the drivers most diligent in "picking up" is being devised.

The newspapers are also used by the Transportation Co. in connection with the telephone directory to acquaint the public with the advantages of taxicab service and the reasonableness of the tariffs. Each advertisement sites some feature of the service and directs the reader to consult the first inside page of the telephone directory for the full schedule of tariffs and an explanation of the operation of the taximeter device, together with the rules to be observed in seeing that the correct amount is charged. Needless to say this puts the whole taxicab offering ready to the hand of any one who wants to know about it.

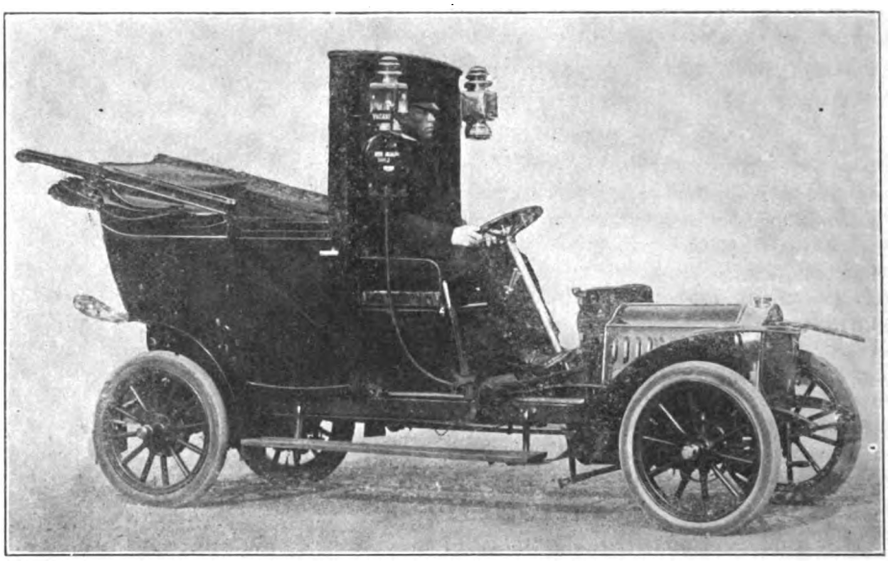
With a prophetic eye, Secretary Palmer looks forward also to the day when every New Yorker who rides in cabs will be equipped with a "cab whistle" with which he may hail taxicabs from the sidewalk when he is so inclined.

"In London," he said, "every habitual cab rider has his cab whistle. When he wishes to hail a cab from where he is standing, he simply blows on it once or twice and the trained cabbies soon appear with a rush. In the morning as he is finishing breakfast at his home or his club, he has a servant go out on the front stoop and blow a few blasts and by the time he is ready to go a cab is outside waiting for him. As taxicabs grow in use in New York, the habit of whistling for them will probably become just as common as it is in London, and if it is, it will mean a great economy in cab operation as the men will thus be able to make frequent 'pick ups' on their return trips."

As yet, the "pick up" has not been officially incorporated in the Taxicab Co.'s system of avoiding empty runs. This is because of a legal difficulty which the company stumbled against early in its career, due to the two classes of hacking licenses which are issued by the city. In addition to the state automobile license for each car, and the chauffeur's state license, the company provides its men with hacking licenses of the class which apply where the drivers operate from stands instead of "cruising" up and down the thoroughfares. Recently a passenger emerging from the Grand Central station hailed one of the company's taxicabs and started to get in. A policeman promptly interferred and told the taxicab driver that if he attempted to take a passenger on his return trip in that way, arrest would follow, since the Taxicab Co. did not have a stand at Grand Central station. Lawyers for the Taxicab Co. have been set at work on the question as to whether the men when thus hailed may take passengers, and it is probable that before long a test case will be made of it.

Wide difference in management ideas appear between the two companies. The drivers for the Taxicab Co. are paid a 20 per cent. commission on their receipts with the privilege of working as many hours a day as they like, while the Transportation Co. drivers are paid a salary and are limited as to the number of hours they work. As far as possible, the drivers for the former company are kept responsible for certain cars which they drive, though when cars are standing idle in the garage they are often assigned to substitute drivers when they are needed at any of the stands. The Transportation Co. holds one driver responsible for a car, but in rush times assigns two men to a car and divides the responsibility between them. Various bonuses are offered by both companies to drivers showing the best records of receipts and keeping their cars in the best condition. The salary of the Transportation Co. drivers is $2.50 a day, supplemented by whatever tips they may get, while the Taxicab drivers, with the temptation to work longer hours, manage through their percentage and tips to get about $7 a day, according to some estimates, while under particularly favorable circumstances a day's earnings may net them $10 or $12.

As indicating some of the modern phases of the automobile business the tire contract which the Taxicab Co. has with an American tire concern is illustrative. All tire repairs and replacements are made by the New York branch of the tire company and the Taxicab Co. simply pays under a contract for so many miles of tire service. The taximeters keep a record of the mileage and the tire company is paid according to the readings. The tires must be kept in good condition both for service and as to appearance. In this way the cab company reduces its tire expense to a known cost, on the mile unit basis, and shifts all the bother of the work on the tire company.



TWO CYLINDER TAXICAB EMPLOYED BY THE NEW YORK TRANSPORTATION CO.

The latter company uses 4-inch tires on 30 wheels, believing that despite the greater first cost there is an economy in having the large size. Its Delahaye cabs, after being received on this side, are all equipped with Midgley rims, which permit rapid replacement of a punctured tire. Each cab carries an extra shoe and inner tube. The puncture problem is met by the Taxicab Co. through the Stepney spare wheels with which its cabs are equipped when they are shipped. In case of a puncture, the spare wheel, which consists of a rim carrying a fully inflated tire and having grappling devices for fastening it to the outer edge of the clincher rim on the vehicle wheel, is clamped flat against the outer side of the vehicle wheel. Since the tire on the spare wheel is inflated and the one on the vehicle wheel is deflated, the former takes the con-

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tact with the ground, although they are side by side like twin tires.

"It will take some time for the public to get thoroughly used to the taxicab and its system of charging," said Secretary Palmer, of the Transportation Co., in speaking of the change. "We have had several kicks at different times from people who thought they were overcharged until we pointed out to them where the fault lay with them. One woman not long ago complained that one of our taxicabs charged her 60 cents more for going from Sherry's to the West Twenty-third street ferry than she had ever paid a horse cab for the same trip. By questioning the driver we learned that while going down Fifth avenue in our cab she saw a friend in a passing hansom. She directed our driver to turn around and overtake the hansom. He turned, but was held up in the traffic at a crossing, and delayed in the jam when he did get across so that the hansom was about three-quarters of a mile up the street before it was overtaken. After speaking to her friend, she had the taxicab resume its trip to the ferry, but there was an extra mile and a half on the taximeter. She finally agreed that the charge was all right."

Station Master Alfred Camacho, of the Taxicab Co., under whose eye the cabs go in and out and who is the director general of their activities finds many surprises in the various effects of weather.

"You would think," he said, "that rainy weather would be the best for the taxicab business, because people, instead of walking in the rain, would call a motor cab. Nevertheless our very best business is on bright holidays and Sundays, and not on the rainy days. It is true we have more calls on the rainy days, but they are all little short trips, while on the fair days, the cabs are hired for all afternoon or for long continuous trips, which mount up in the receipts. The cabs are being used for weddings, funerals and all kinds of functions."

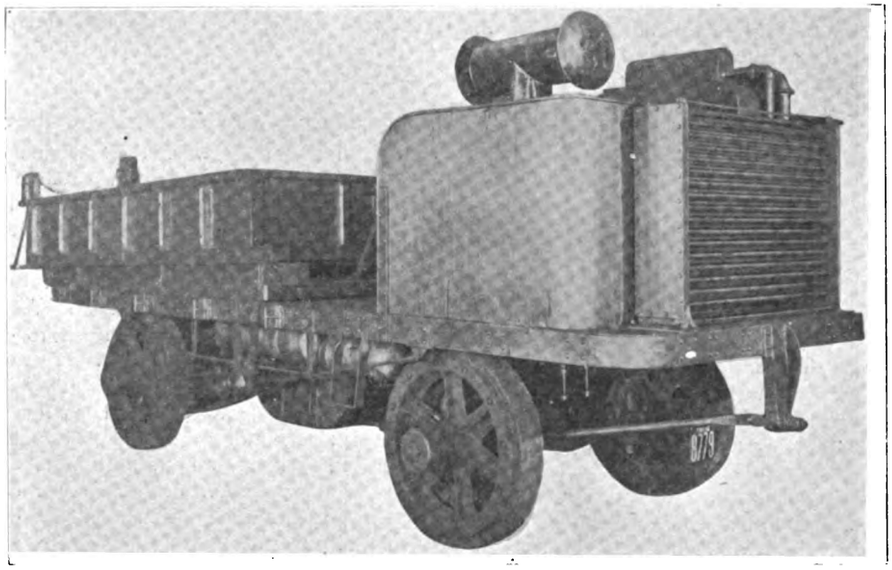
Unofficial estimates place the gross earnings of the Taxicab company's machines at from $30 to $35 a day, while the earnings of the Transportation company's cars are not quite so high. The latter have a maximum speed of about 21 miles an hour, while the Darracqs of the other company, with a four-cylinder motor of 12-14 horsepower, are capable of 35 miles an hour. The taximeter charges are the same for both companies, the fare for two passengers being 30 cents for the first half mile or fraction thereof, 10 cents for each succeeding quarter mile, and 10 cents for each six minutes of waiting.

President Allen, of the New York Taxicab Co., is making arrangements for corresponding companies in Chicago, Philadelphia, Washington and other cities, but no very active work is being done as yet owing to the difficulty of getting the cabs. The New York company, he says, will need all the cabs that the Darracq factory can send over for some time to come.

STEAM TRUCK FOR HEAVY HAULING

New Jumbo of Road Vehicles, with Capacity for 8 to 10 Tons—Special Details in Its Construction.

One of the most massive commercial vehicles of American construction yet put into service, and one the construction of which in every way inspires confidence as to its stability and durability, is the new heavy steam truck which has just been evolved by the Pittsburgh Machine Tool Co., Allegheny, Pa., and which is here illustrated. Unlike many of the heavy duty vehicles now being produced, the Pittsburg is propelled by steam power, a special plant complete and up to date in every respect having been designed for the purpose. As shown with dumping body intended for the haulage of brick, it has a rated capacity of 8 to 10 tons, thus bringing it well up into the front rank of Jumbo road vehicles, regardless of method of propulsion.



STEAM TRUCK WITH CAPACITY FOR 8 TO 10 TONS

The fire tube boiler is mounted on the foot board in front, the condenser being placed at the front, equipped with the usual air and feed pumps. The engine is of the three cylinder, single acting type, mounted under the body in the waist of the machine, and drives the rear wheels independently through a reduction gearing affording two possible speed reductions, and side chains, running from the differential counter shaft. An auxilliary device, also of extreme importance in a machine of this class, is the independent hoisting winch, which is mounted transversely of the car, with its winding drums placed outside and about midway of the body. All working parts are fully enclosed by a metal casing under the platform, and the tanks are located under the platform and beside the engine casing.

The frame is of riveted channel steel, the top plate being ¼-inch thick. Stake pockets, together with a set of steel stakes are a part of the regular equipment. Contrary to common practices, the wheels are steel castings, mounted on special bearings. The general construction follows the lines of motor car design, except in the matter of such reinforcements as are required on account of the unusual stresses to be met. Fore these, special provisions have been made, as in the trussing of the platform and the staying of the front axle by means of radius rods extending in the form a V, froma special bracket depended from the front of the platform to the ends of the steering axle. The special form of trussed axle casting also is of interest in the same connection.

The truck is equipped with two sets of brakes, one, consisting of an outside shoe system, applied by hand, and the other an air brake of approved construction. The latter is applied to a drum surrounding the differential group, and is of the contracting band variety.

Two New Plugs in Sta-Rite Family.

Two new spark plugs have been added to the Sta-Rite family of the R. E. Hardy Co., of New York. The first is styled the Gotham Sta-Rite, and its chief feature of difference from its brothers is that it has an extended shell partly enclosing the inner end and protecting the porcelain from heat, oil or soot. The porcelain has a single hollow tube packed with copper asbestos filled gaskets which cannot become wedged in. This plug is particularly recommended for engines using a great deal of oil. The other new addition to the family is the No. 4 A magneto plug, in which the insulated electrode has an enlarged head equipped with four points, any one or more of which will serve as a jumping point for the spark. Much greater efficiency is claimed for it in connection with a magneto than for a single gap plug.

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Newest of Continental Motors.

Among the products of the Continental Motor Manufacturing Co., Muskegon, Mich., the most recent in the new type "K" motor, which may be characterized as possessing all the excellent features of previous models together with a few additional ones of its own. It is of the four cylinder vertical type, has cylinders 4¼ by 4½ inches, bore and stroke, and is rated at 24-28 horsepower. Complete, it weighs 360 pounds.

The general construction is the same as that of former Continental models, that is to say, the valves are all located in offset pockets on the same side of the crank case—the right in this instance—this arrangement, together with the placing of the carburetter, timer, magneto, pump and fan driving belt on the same side, making it possible to make all ordinary repairs and adjustments from that side alone, and rendering the entire removal of the hood a rare necessity. In the standard arrangement, the exhaust manifold is outletted at the forward end of the motor, the intention being to lead the waste gases back under the steering gear and to the muffler in the rear on the right side of the car. An alternate arrangement, however, provides for leading the exhaust from the centre of the manifold between the twin cylinder castings, and so to the rear of the machine on the left side as is more commonly done.

The cylinders are offset, as is done in all recent Continental motors, the location of the auxilliaries provides for the use of but three timing gears instead of five or six as are frequently required, the cams are made integral with the shaft and with the mushroom valve lifters, are carefully ground and hardened, and both the magneto and air circulating pump are arranged to be readily removed either for inspection or repair.

One of the special features of the machine, however, is the automatic lubricating system, which is the same as is used on the larger motors of the same family, but adapted for this particular machine. The usual splash system is employed, constant level being secured regardless of external conditions, by the use of a separate overflow chamber or sump in the engine base, from which the oil is raised to the crank pits by means of a small gear pump driven from an extension of the timer shaft. Oil pockets of suitable size are cast over each of the crank shaft bearings for the accumulation of the splash, a constant flow over all the bearings thus being secured.

Modifying Fan Action in Winter.

Considerable improvement may be obtained in the winter running of a motor, not infrequently, either by reducing the speed of the fan, or disconnecting it altogether. Generally speaking, a motor which is cooled so thoroughly that it never shows signs of overheating in summer, even in the hottest weather, and when running for a considerable distance at low rates of vehicle speed, will be found to require less draught in winter. Where the fan is belt driven, it is possible to reduce its speed either by slackening the belt tension—which is a slipshod and uncertain expedient—or by replacing one of the pulleys with another of different diameter. With the ordinary gear driven arrangement, the only practicable method is to disconnect the fan altogether, or else to alter its suction by replacing it or altering the gear ratio of the drive. Fans which are so constructed that the pitch of the blades may be changed through any desired range, are ideal in their adaptability to the varying conditions of winter weather.

Making One Nut Lock Another.

Failing a lock washer or regular lock nut, it is possible to secure a passable counterfeit for either by using two plain nuts screwed together with a little "grummet" of waste or spun yarn between them. After setting home the first nut, the thread of waste should be twisted around the bolt, close to it and in such a way as to embed it in the roots of the screw where the second nut is destined to come. This simple form of packing frequently lasts for a surprising length of time, and provides sufficient resistance to hold both nuts against any ordinary amount of vibration practically as well as the more mechanical device made for the purpose.

Adaptable Car for Physicians.

A recent invention in the way of a physician's motor car takes the form of a neat little inside driven landaulette which has divided seats. The left hand seat is made removable, and may be slid off the back of the machine, together with a small portion of the footboard, which is made integral with it. A couple of stretcher bars may then be attached to it, and the whole converted into a very passable carrying chair for an invalid. In case of an extreme emergency, the second seat may be entirely removed, when the floor along side the driver and extending to the extreme rear of the vehicle, may be used for the conveyance of a patient laid at full length.

Car Without a Radiator.

In a newly developed French car, no radiator is employed, the cooling of the jacket water being accomplished by direct contact of the air instead of by radiation through the usual cooler. To this end the hot water passes through a set of three nipples arranged in parallel connection, the jets thus formed passing through chambers which are so placed as to permit a considerable amount of cold air to be drawn in by the suction. The air and water mingle to a certain extent in passing to the tank, but are afterward separated by settlement, the heat being carried off by the air. The principle of the action is precisely that of the steam engine injector.

New Type of Material for Tops.

An entirely new type of automobile leather-autofoid, in which wonderful durability and richness are claimed to be obtained, has just been produced by the American Leatherette Manufacturing Co., Buffalo, N. Y.

The material is based entirely on chemical lines and is entirely different from the artificial leathers which have heretofore been on the market. Not only is autofoid a duplication of the leather itself, but it is waterproof, oilproof, dustproof and weather cured. This material is faced with leather on both sides and in the manufacture of tops does away with the extra lining which has heretofore been necessary, and at the same time adds richness of appearance. A big feature in favor of this material lies in the fact that the top builder can absolutely match the colors of the automobile upholstering and this gives a richness to the inside of the top without in any way making it appear gaudy, while dust and oil can readily be washed off with a hose without damaging the material.

Covering for Sliding Rods in Gearset.

For protecting the sliding rods in the gearset from leakage as well as to guard them from the effects of road dust, an exchange suggests the somewhat cumbersome expedient of covering them with leather protectors constructed on the general order of the bellows attached to the ordinary camera. One end may be attached to the gear box by means of a suitable junk ring of thin metal, while the other is secured to the outer end of the rod by a service of flexible wire. The cover itself may be made of pliable leather sewn together to form a long tube, and creased transversely to enable it to fold properly.

Position for "Pull-Out Rods.

Other things being equal, it is an advantage to have the gear striking or "pull-out" rods from the gear box taken from some point above the parting line of the two halves. By this means, any possible leakage which may result when the bushings of these rods have become worn is obviated, the gearset thus being rendered much cleaner than otherwise would be the case, while as a secondary, though perhaps more doubtful advantage, the effect of being able to lift off the actuating members with the cover also is to be considered.

Protection for a Tireless Rim.

To prevent damage to the rim when it becomes necessary to run for any distance without a tire, it is possible to construct a substitute of passable effectivenes by winding the rim with several layers of heavy rope or hawser, the layers being so arranged that when compressed by the load, they will spread out between the flanges, forming a compact and somewhat resilient pad, high enough to keep the metal from the road under ordinary useage.

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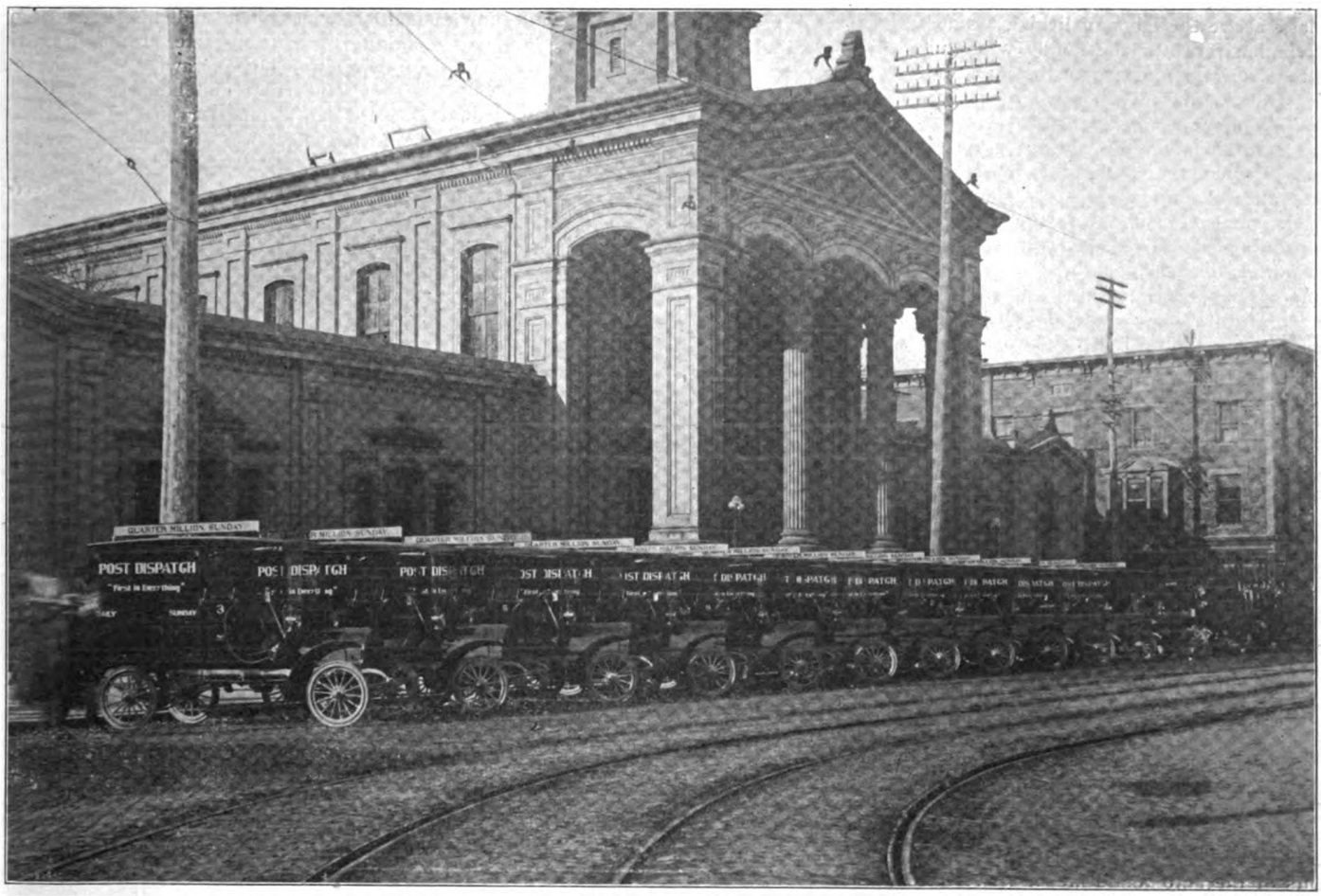
FOR SPEEDY NEWSPAPER DELIVERY

Battalion of Specially Designed Cars Installed by a St. Louis Paper—The Transmission One of the Features.

Newspaper horses, the kind that go galloping through the streets faster than fire horses and that help make it possible for the average citizen to get a "six o'clock edition" at four in the afternoon, are to feel real motor competition in St. Louis. Instead of the newspaper races of the afternoon sheets being "hoss an' hoss," they will be "hoss" and automobile, fourteen special machines, as shown in the accompanying illustration, having been installed this week by the St. Louis Post-Dispatch for its delivery system to its distributing centers.

It is a proud set of newspaper drivers that is in charge of the new wagons, for not only are the latter speedy enough to hold their own against the horses, but they are fitted with wind shields and storm curtains, and for the winter months have an ingenious grating arrangement which permits the warmth from the air cooled engine to ascend to the enclosed front of the car, caressing the driver's feet and making the wagon as comfortable as a steam heated flat.

The wagons are Model R four cylinder delivery cars, made by the Logan Construction Co., of Chillicothe, O. The air cooled motors develop 20 horsepower. A special transmission is used, giving two forward speeds and one reverse, but the motor is geared so low that very little gear shifting is necessary, it being possible to take nearly all grades on the high gear even when the wagons are fully loaded to their 1,500 pounds capacity. The cars are required to make four trips daily, varying from four to fifteen miles in length. A special garage is being prepared for them, and Logan experts will take care of them.



READY TO RUSH THE NEWSPAPER TO ITS READERS

Automobile Buses for Railway Hands.

Automobiles to keep railway employes contented is one of the latest solutions for the labor problem as encountered by the Southern Pacific Railroad. The company removed its roundhouses from Rocklin, Cal., to Roseville, much to the displeasure of train and engine crews and roundhouse employes who owned their own homes in Rocklin. A mass meeting was held, as a result of which a line of automobile buses has been started to accommodate the men.

ARTISTIC SELECTION OF COLORS

Variety as the Saving Factor in the Painting of Vehicles—Its Differentiation from Sensational Color Schemes.

Apparently all colors lead to the automobile, and to the man on the box the query doubtless comes, "What is to be the final denouement in this drama of pigments?" We have heard no small uproar of argument concerning the disposition of the color problem in its relation to the automobile, but each builder, and, in turn, each painter appears to be a law unto himself in the choice of colors and combination of colors, according to the Carriage Monthly.

The determination of many builders, as expressed through the medium of the daily papers of recent issue, of adhering to individual or firm colors in the painting of the auto output, does not promise any definite or speedy settlement of the question of choice in the matter of color display. If anything, it assists to establish "confusion worse confounded." It is neither probable nor desirable, from the present viewpoint, at least, to witness what some recent writers have been pleased to call a "standard-

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ization" of colors for use on automobiles. The results of any such invasion of the colorist's prerogatives would, if anything, be more reprehensible than the prevailing color discord. It would discourage any attempt to improve upon the colors in use, or the attempt to invent new colors. Standardizing colors for passenger equipment cars, upon railroads, has driven the colorists from the field of railroad work, and, in a sense, beggared the trade.

Variety in colors is in reality the life of the craft. Moreover, it is the one touch of art that lifts the painting of the horseless carriage above the labor of licking a smear of Venetian red over the family wash tub. But that variety, contrary to the intentions of its authors, has degenerated to a "vain show" of pigments having little to recommend them, beyond the mere notoriety which attaches to colors of a sensational or eccentric character.

Variety in colors is the saving factor in the painting of all vehicles, but it should be a variety based upon the sound law of harmony, appropriateness, reference of color to form, and a general unity of all the elements of color, finish and appearance. Manufacturers are already declaring through the columns of the daily press that a trained staff of experts are now working upon color novelties for the season of 1908.

Evidently we are to witness the same demoralizing exhibition of color sensations during next year that has in certain quarters been cheered to the echo during the season now closing. However, we believe that there is a little leaven working that will ultimately leaven the whole lump, and that out of the chaos of disputed color proprieties will emerge a style and choice of colors plentiful in variety, and strictly in accord with the best practices of colorists having a right to the title.

Turning to a list of the colors which the finest traditions of carriage painting have sanctioned for a quarter of a century, at least, and which list, let us say in passing, is sufficiently elastic to meet all the requirements of the automobile industry, we have more than 25 staple reds, fully half that number of greens, quite one-third that number of blues, a half-dozen lakes, several fine yellows, four or five attractive browns, with enough legitimate variations from these to give the automobile painter an opportunity to choose a color, or a combination of colors that will do credit to the sense of what is appropriate and beautiful.

Between the work of the premier craftsmen and the crude creations of the amateurs and the lackeys attending the sensation chariot, there is an insurmountable barrier, and once the public fully recognizes it, we may expect the reign of a better art sentiment in respect to the laws of colors as applied to the automobile.

To paint a vehicle with a paint costing $5 a pound may seem to the average man like an enormous waste of good money, but along the automobile Rialto, New York, you may hear it said that "nothing is too good for the automobile."

And this statement appears to be supported by certain incontrovertible facts, among which may be mentioned the use of madder lake in the painting. Incidentally, Manhattan painters are paying $1.50 for a four-ounce tube of this famous lake, which, it goes without saying, offers a surface, when artistically finished, magnificent and unique in color effects. Perhaps like the Teddy bear madder lake may exist as a fad for a little brief, but luxurious, notoriety, and then disappear into the innermost recesses of oblivion. At the present, however, it is being received with all the favor that belongs to the scion of the royal family.

As a matter of historical interest, madder lake is the product, through boiling, filtering, etc., of madder root, found in the tropical sections of the old and new world.

The base for madder lake should be about as strong and supple, and smooth and level, as the best craft skill can make it. After rubbing the surface out of roughstuff, sand it lightly with No. 0 sandpaper, dust off thoroughly, and apply a coat of Indian red ground in japan. Uusually one coat of the Indian red will suffice to develop the necessary solidity of color, but in case there should exist any lack of color density, a second coat of the red is in order of application.

Then thin some of the madder lake with a perfectly pure, water white turpentine, and apply a coat with a camel's hair brush. Then in a pint of elastic rubbing varnish stir one-half ounce of the lake, mixing until a thorough incorporation of pigment and liquid ensues. Apply with a soft, full elastic brush, flowing the glaze on freely. In due time deaden the gloss with water and No. 00 pulverized pumice stone, using a soft piece of sponge in lieu of a rubbing pad. Wash up and apply a second coat of the glaze. Stripe in lines of black or gold and finish in A 1 fashion for results.

How De Dion Fooled the Gendarmes.

Appearance is a big factor in speed persecution, as many an owner of a racy looking car has found to his sorrow. Many a family party in a big comfortable touring car has been allowed to go through speed traps at 40 miles an hour without interruption, where the driver of a low-hung, racing type runabout has been held up for going 20 miles an hour, because with the former the muffler was closed and everybody was sitting erect and happy while with the latter the driver was humped up in a little racing seat, with the steering wheel in front of his nose, looking as though he were making a last spurt for the Vanderbilt cup, or some other cup, with the muffler open.

To give a demonstration of how largely the officers of the law are affected by mere external appearances, the Marquis De Dion recently constructed a special car for the purpose. The Marquis had found that when driving a big car he was invariably accused of speed violation and as invariably fined, no matter how slowly he might drive. First building an especially long chassis, he fitted it with a 4½ horsepower De Dion motor and mounted a racing body with a long hood suggesting at least six cylinders and 100 horsepower. Then he added the largest acetylene headlights obtainable and a deep, roaring horn. Inviting a superior officer of the gendarmes to be his companion for the demonstration, he set forth in the dusk of the evening with muffler wide open and his little engine barking at a furious rate, although his rate of travel was but a crawl. With the officer of gendarmes and himself heavily begoggled and leaning forward from their cup seats, the effect was striking, and the Marquis was promptly stopped by excited gendarmes who accused him of making terrific speed and endangering human lives. His protests were in vain in the face of his huge looking car, until the superior officer disclosed his identity. The latter was impressed with the justice of De Dion's complaints and all the gendarmes were given a lecture about rashly accusing drivers of high speed just because their cars were big, or happened to possess the appearance of being designed to go only at extreme rates of speed.

Municipal Garage for St. Louis.

Increasing use of automobiles by city departments is causing many of the larger cities to consider the advisability of building and maintaining municipal garages. St. Louis is now making the venture, a garage for the cars used by the water department being in process of erection at King's Highway and Eager Road. The building will be of modern French architecture, with a white stone front, and when finished prospective garage builders wil have good reason to study it as a model. If it meets expectations in convenience and ecoonomy it is probable that the city will build more garages of the same type for housing city cars that are at present taken care of in three large buildings rented for that purpose.

Long Walk to Pay for Stolen Ride.

There has been considerable thieving around San Francisco of late and several automobiles have been missed from their accustomed places at times so it is not surprising that when Duncan Davis, of San Anselmo, missed hib big touring car, he should at once institute a thorough search for it. When he found the car five miles from where he had left it the owner compelled the four persons in it, two men and two women, to get out at the point of a pistol. Despite their protestations that "it was all a joke" Davis thought it ought to be worth a walk home, which the four "friends" were compelled to make in payment for their ride.

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REAL SALESMEN THE PRESENT NEED

How the "Readjustment of the Industry" is Affecting the Personnel—Changed Conditions Demand Ability.

While the "readjustment of the industry" which is being discussed more or less just now, is destined to be widespread and lasting in its effects, safe to say its influence will in no way be more marked than in the reformation of the pensonnel of the industry, both in rank and file. A process of thorough infiltration already is in progress, and when it is finished a wonderful transformation will be apparent—a transiormation in which the prosperous and florid "automobile men" who have flourished for so long a time, will be displaced by a body of sober and industrious business men whose regard for the processes of manufacturing or selling motor cars will be no less serious than their regard for any other of the industrial and commercial pursuits.

That the need of such a renovation in the personality of the various firms connected with the industry is quite as necessary as a reformation in the methods of directing the business. has been apparent for a long time to the older and wiser heads of the industry. Just how the need is felt and how the change is proving to be in a way self-inductive, best appears from the opinions of a number of these well known and experienced authorities.

Thus speaking of the requirements essential in a motor car salesman, Windsor T. White, of the White Co., said recently: "What we want now is not automobile men, but business men. We are just coming to find out the real worth of our employes, and to discover what we ought to have known long ago—that the same qualities which we should value in a man in any other line of activity, are the qualities we require right here.

"For instance," he continued, "a man may have been on the floor of an agency selling cars for several years. In the course of his experience, he may have been able to sell machines aggregating in value no less than $100,000 a year. Generally, such a man will come to rate himself as a $100,000 man. These are the actual conditions, however.

"In the past season or two, buyers have been gathered indiscriminately, advertising and publicity campaigns have been widespread and effective and furthermore, a considerable amount of business has come into the average agency almost of itself, as you might say. In this way it has been practically impossible to determine how much of the business consummated has been due to actual salesmanship, and how much to outside influences of one sort or another.

"Conditions are changing rapidly now, however, and it is no longer so easy to sell cars. Consequently the employee who last year, let us say, under the name and salary of a first class salesman was in many cases performing the work of the plainest kind of a clerk, now has an opportunity to prove whether he possesses real selling ability. When he has to go out and make a market for his car, it may be that he will prove to be of comparatively small value in a business way.

"In other words, selling now has come to be a matter of business ability alone. The man who knows his car, who keeps well posted on what other makers are doing and what other dealers are holding out as inducements to customers, and who keeps read up in all that pertains to his line is able to get ahead. Of course, the other sort of man, the fellow who is all full of noise and bluster, but who has no actual ability, is bound to find his level also, because in the newer order of things ranking will be done solely on a basis of actual personal ability."

In the same connection, the representative of another large car manufacturing interest expressed himself in similar strain regarding factory operatives.

"Factory men should not be automobile men," was his terse way of expressing the idea. "What we want in a shop is machinists, bench and floor hands, assemblers, or whatever, but we want them to be able to do that work well and to do that work alone.

"As soon as the average mechanic gets his first smell of gasolene, he begins to think he knows all about cars and right away he begins to want to give advice to the designer and the superintendent and everybody that comes within speaking range of him. But somehow he ceases to take an interest in his own work just about the time he begins to get automobile wise. Now it takes all a man's time to become a good machinist and once he has learned his trade, it takes about all his time to keep pace with the growth of that trade. Even at that, good all around machinists are comparatively rare. In the same way, every art and craft represented in the construction of a motor car, is the development of years of specialized training, and in order to outlay the best possible workmanship on the materials we devote to the machine, we must employ the men who are the most accomplished specialists in their own line of work. The moment they begin to slop over and cultivate the automobile as a thing apart from their trade, their usefulness begins to diminish.

"Understand," he continued "I don't mean to say that a good mechanic cannot find ample use for his handicraft if he devotes himself to the construction or repairing, or even the running of cars. What I do say, though, is that the man in the shop who lets his mind wander away from his job to the place where that job is to be used after it leaves his hands, like the wheelwright who tries to teach the coachman the art of horsemanship, is looking at life the wrong way about. We have had plenty of men in the past, who thought more of the automobile than they did of their jobs. They are trouble makers, first and last and their influence always is to overthrow the discipline of the shop, even though their intentions may be of the best and their ambition most admirable."

It is fast becoming evident that too many men in the industry regard its affairs rather more in the light of the processes of a mere pastime, than as the elements of a growing and important industry. In fact the common use of the term "game" in connection with the events of its business and sport reflects a sinister light on those who use it either in thoughtlessness or in ill-concealed scorn.

It is related of one of the largest and most successful manufacturers of the middle west, that whenever an applicant for employment happens to mention the fact of his having been "in the game" for three or four years, the interview immediately is brought to an end by the manufacturer, who, rising, gruffly announces that the applicant will hear from him by mail if he shall have need of him. Somehow letters promised under those conditions never reach their destination, and likely a good many ambitious men are wondering to-day why the summons for which they have waited so eagerly never has come.

The "Johnny" Type of Salesman.

Why some concerns still persist in putting the "Johnny" type of salesman in charge of their exhibits at such important shows as were recently held in New York remains a mystery, remarks the Carriage Monthly. Dress suits and lounging ladies are not the requisites of salesmanship. Brains, and a thorough knowledge of the subject, are. One man in overalls who knows his business is worth a dozen inattentive Johnnies in dress suits trying to talk busines and carry on a flirtation at the same time. Many a firm, especially the accessory people, will go home from the New York shows wondering why they booked so few orders while their neighbors fared so well. Let them look into this "Johnny" question. Evasive answers, born of superficial knowledge, do not satisfy people who do a bit of thinking on their own account. A man who does not know his line of goods thoroughly has no place at an automobile exhibition where people come to get information, and the sooner all firms reduce this show proposition to a strict business basis, eliminating all attempts at making it a social affair, and selecting their representatives for their brains and not for their looks, the better it will be for the industry and for themselves. In this respect the motor industry could get a pointer or two from the business-like conduct of carriage exhibitions. Why should not the motor car business be conducted like any other business? Who started all this nonsense anyway?

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EMULSION FOR ROAD SPRINKLING

Results Reported from Use of Oil and Soapsuds on Boston's Park Roads—Its Efficiency and Economy.

On the same emulsion principle with which its cod liver oil is made endurable to human palates, Boston has been coating oil with soapsuds for its parkway roads, and the roads have thrived on the treatment, according to John A. Pettigrew, the superintendent of parks. Pettigrew's problem is to keep down the dust nuisance and last year his department tried adding a dash of oil to the water sprinkled by the cars on some twelve miles of the park roadways. The roads thus treated showed very good results and needed the sprinkling cars very infrequently compared with those on which plain water was used. This year the experiment was carried to the whole park system of roads, about forty-two miles, and the figures show remarkable economy over the use of water alone, with an incidental benefit to the roads that greatly lessens their repair charges and makes them better for traffic.

Before trying the oil mixture, the department used to spend as high as $883 per mile of 30-foot roadway for 230 days of watering on some parts of the system while on others the cost was as low as $489 per mile for 182 days of watering, making an average of about $680 per mile each season. Shorter hours of labor and higher team hire would make the same service cost more at the present time, but with the oil emulsion the cost of keeping the dust down even more effectively is only about $352 per mile for the season, or about 2 cents per square yard.

By combining it with soapsuds and water, the oil is applied without annoyance to the users of the road, and carriages may follow immediately after the distributing sprinklers without being soiled. The emulsion helps the oil percolate and penetrate into the road material instead of remaining on the surface in unabsorbed pools. The first application of the season contains about 16 per cent. of oil, to form a basis, while subsequent accretions of dust blown on the roadway from other sources or present by attrition of the road itself, are taken care of by occasional applications of thinner emulsions, containing from 8 to 10 per cent. of oil. These renewals are made in periods ranging from ten to twenty-five days, according to the nature and traffic of the road.

The emulsion is made by a formula which requires 10 to 15 pounds of cottonseed oil soap, at 4½ cents a pound, to 100 gallons of Texas petroleum, at 6½ cents a gallon, the soap being first dissolved in 50 gallons of water. The soap is placed in barrels of water and dissolved by steam heat, then pumped into stock reservoirs, which are simply street sprinkling wagons. To each barrel of soap and water two barrels of petroleum are added. A steam pump is then attached to the tank containing the mixture and the contents agitated until emulsified. This forms an emulsion "stock" containing 66 per cent. of petroleum, and the "stock" is later diluted to the oil percentage required. When a sprinkling wagon is to be sent over a portion of road, its tank is first partly filled with "stock" and when the wagon arrives at the portion of road to be treated, a street hydrant is used to fill the balance of the tank with water, the latter readily mixing with the emulsion and thinning it to the percentage necessary for effective use.

Not only does the use of the oil mixture lessen the required frequency of trips by the sprinkling wagons, but it permits the laying up of the road rollers after the middle of August. The asphaltum in the Texas oil has a binding effect on the surface of the road, and less road repair is necessary.

In the course of its road study the department has come to favor a thin rolling cushion of coarse sand or fine screenings, saturated with oil, although it is hard to maintain on curved roads where the swing of vehicle wheels tends to throw it to the outer side of the curve. Such a cushion, being loose and rolling, is thought to release the air suction underneath the tires of rapidly moving automobiles which is declared to be so destructive to the road binder. When fine sand is used there is a possibility that frequent oil applications will form it into a hard asphaltum surface which has a tendency to scale.

White Adds to "Route Book" Series.

The White Company have just issued the "White Route Book Number Five." It gives the detailed road directions for over 1,500 miles of the main highways, suitable for tourists, in New York State and in the Province of Quebec. The routes given include those in both directions between New York and Albany and in both directions between Albany and Buffalo. In addition, directions are given for the route northward from Albany to Saratoga, and thence by way of Elizabeth to Plattsburg and Rouse's Point to Montreal. From the latter city the route is given along the north bank of the St. Lawrence to Quebec. Still another route is that by way of Tuxedo and Central Valley to Newburgh. The new route book, like the four numbers which have preceded it, is profusely illustrated and contains a double-page map of the section of the country covered, as well as an article descriptive of the route. Like all other of the White route books, the new volume is designed for gratuitous distribution.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

CHAIN PROTECTED TIRES BARRED

New City Ordinance Excludes Them from Park Roads and Parkways—Police Guard Entrances and Avenues.

It now is illegal for an automobile with chains on the tires to enter any of the public parks in Greater New York or travel upon any of the roads that are under the jurisdiction of the Park Department. The ordinance prohibiting it was adopted at the request of that department and went into effect on Monday, 16th inst. Following is the body of the ordinance:

"No automobile or horseless or other vehicle, wearing chains over the tires of their wheels shall enter the public parks or the traffic roads under the jurisdiction of the Board of Parks, without permission of the commissioner having jurisdiction. This rule and regulation shall take effect December 16th, 1907."

The highways under the jurisdiction of the Park Department, which are covered by this ordinance are as follows:

Manhattan — Central Park, Riverside Drive, Morningside avenue west.

Brooklyn—All macadam roads, such as the drives in Prospect Park, Eastern Parkway, Ocean Boulevard, Shore road, Bushwick avenue from Eastern Parkway to the extension of Jamaica avenue, etc.

Bronx—Spuyten Duyvil Parkway, Rockwood Drive in Van Cortlandt Park, Van Cortlandt Park avenue in Van Cortlandt Park, Pelham avenue in Bronx Park, Eastern Boulevard in Pelham Bay Park, City Island road in Pelham Bay Park, Crotona avenue in Crotona Park, Mosholu avenue in Van Cortlandt Park, Gun Hill road, in Van Cortlandt Park, Masholu Parkway, Bronx and Pelham Parkway, Shore road in Pelham Bay Park, Crotona Parkway.

One of the effects of the new rule is that for certain journeys it will be illegal to have chains on the tires when traversing the roads out of the city. On the trip from New York to Boston, for instance, chains may not be put on the wheels until Pelham Parkway is left behind. Non-skidding tires of the studded or armored type are not barred under the ordinance.

Enforcement of the rule was begun with vigor early Monday morning and automobilists who arrived at any of the entrances to Central Park found there one or two policemen, while at the main entrances at the Circle and the Plaza mounted patrolmen were on duty to turn back any automobile equipped with non-skidding chains. About three-fourths of the automobiles arriving at the park during the day were denied admission on that account. There was no relaxation of police vigilance in the evening.

Similar conditions prevailed at Bronx and Van Cortlandt parks and at Prospect Park in Brooklyn.

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The Week's Patents.

865,288. Tread for Pneumatic Tires. Erle K. Baker and Charles G. Hawley, Chicago, Ill. Filed May 16, 1907. Serial No. 374,059.

1. A resilient tire for vehicles, having a tread portion containing an interference strip of fabric, vulcanized therein, and also containing a large number of staple like metallic parts having closed, rounded ends in substantial contact with said interference strip and presenting their ends at the surface of said tread portion, substantially as and for the purpose specified.

865,302. Clutch Mechanism. Bengt M. W. Hanson, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Aug. 9, 1905. Serial No. 273,477.

1. The combination, with framework, of a sleeve bearing projecting therefrom; a tubular driving shaft mounted in said sleeve bearing, and having a chambered head; a clutch plunger having a transverse slot mounted in the chamber of the head; a spring for throwing said clutch plunger in one direction; a rod movable in the bore of the driving shaft, and having its end shaped to enter said transverse slot, and actuate the clutch plunger against the stress of the spring; a power transmitting sleeve surrounding the driving shaft and its chambered head; and a complemental clutch element carried by said sleeve.

865,306. Means for Securing Soft-Tread Tires to Rims. Frank M. Hilton, John S. Hilton, and William W. Hilton, Akron, Ohio, assignors of one-half to Harvey Musser, Akron, Ohio. Filed May 12, 1906. Serial No. 316,563.

1. In a vehicle wheel, the combination of a rim provided at one side with a confining flange, a lock ring slipped upon the opposite side of the rim and having a corresponding confining flange, a split spring annular binder fitted to the rim and adapted to prevent outward displacement of the lock ring, and a keeper at one end of the binder having an opening therein to receive the opposite end of the said binder and having a slot in its side to provide ingress and egress to the said opposite end of the binder.

865,315. Lubricant Feeding and Distributing Mechanism. William E. Parr, Madison, Wis., assignor to The Madison Kipp Lubricator Company, Madison, Wis., a Corporation of Wisconsin. Filed March 13, 1905. Serial No. 249,849.

1. In a lubricating mechanism, the combination of the lubricant receptacle, a pump fitted therein and having its cylinder secured to the inner face of one of the walls of the casing of the receptacle, a distributer, also secured to the inner face of one of the walls of the receptacle, and having a lubricant chamber, connections between the pump and the distributor arranger outside the receptacle and extending through the walls thereof to make connections with the said parts respectively, means for operating the pump arranged with the receptacle, and a valve within the lubricant chamber of the distributor also operated from within the receptacle, substantially as set forth.

865,338. Power Yielding and Receiving Means. Ford W. Harris, Winkinsburg, Pa. Original application filed Feb. 19, 1906, Serial No. 301,956. Divided and this application filed July 16, 1906. Serial No. 326,475.

1. The combination with an engine cylinder, a piston, and a valve, that governs the admission of fluid to the cylinder of means for causing the travel of the valve to be independent upon the speed of the piston, passages that communicate, respectively, on opposite sides of the passages, and means that govern communication thereof with the passages.

865,384. Timer. Charles S. Hardy, Summit, N. J. Filed Jan. 21, 1907. Serial No. 353,248.

1. In a timer, the combination with a contact; of a member, normally operatively rotatable in a single continuous direction, on which member said contact is supported; a second contact; means for supporting the second contact directly in the path of movement of the first contact, whereby the two contacts engage directly with each other; and means for permitting a yielding movement of one contact with respect to the other, in a direction substantially in line with the path of movement of the contact which is supported on the rotatable member, at the time of contact making impact.

865,411. Cushion Tire Wheel. Charles

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A. Marien, St. Louis, Mo. Filed Aug. 27, 1906. Serial No. 332,125.

1. The combination with the rim of a wheel, of a tire of resilient material seated on said rim, cross bars passing through tire, annular members of rigid material engaging the ends of said bars, and retaining plates removably secured to said rim and locking said annular members against radial movement.

865,443. Tire Shield. Thomas J. Sprinkle, Hillsboro, Ohio. Filed Sept. 10, 1906. Serial No. 334,013.

1. In combination with a tire, a shield, wires embedded therein and extending longitudinally of the shield and lying upon opposite sides of the longitudinal axis thereof, said wires being volute with one of the volutions embedded in the material at the edge of the shield and the other volution embedded in the material in the vicinity of the middle thereof.

865,449. Clutch Device Power Transmitting Mechanism. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed Jan. 21, 1907. Serial No. 353,338.

1. In a power transmitting mechanism, the combination with a driving and driven parts, of a plurality of nested clutch devices, and suitable gearing connections whereby different speeds may be imparted to the said driven part from the said driving part through said clutch devices.

865,650. Valve and Sparking Mechanism for Hydrocarbon Engines. Levi E. Lowe, Columbus, Ohio. Filed Dec. 3, 1906. Serial No. 346,027.

In a device of the character described, the combination with the cylinder of an explosive engine, of an outlet valve comprising a valve stem and a valve head, a casing in which said valve is mounted, an oscillatory arm located upon one side of said valve, a contact point located upon the opposite side of said valve, and a curved finger carried by and movable with the oscillatory arm which extends around the valve head and is provided upon its free end with a contact point adapted to contact with the first named contact point, said contact points being located in the path of gas flow past the valve head, and said valvehead being so shaped as to direct a portion of the gas flow against the contact points, said valve head lying within the curved portion of the finger.

865,662. Igniter System. Richard Varley, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed May 11, 1906. Serial No. 316,258.

1. In an ignition system, a rotating cam, a finger moving against a fixed contact and arranged to be abruptly moved by said cam, an additional blade or finger in the path of said cam, and a single switch element for directing the primary current into both of said fingers.

865,663. Ignition System for Explosion Engines. Richard Varley, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Oct. 8, 1906. Serial No. 337,871.

1. In an ignition system for explosion engines, a pair of vibrators, and a single means for positively impelling both of said vibrators to respectively open and close separate circuits.

865,666. Driving Clutch for Automobiles. Charles Wendorff, Chicago, Ill. Filed March 4, 1907. Serial No. 360,367.

1. In a power driven vehicle in combination with the axle and the wheel journaled on the axle, an outer annular clutch element rigid with the hub; an inner clutch element consisting of a plurality of parts, each adapted for seating outwardly against the inner surface of the outer annular element; a collar fast on the shaft within the inner clutch elements; plungers lodged for radial movement in the said inner clutch elements; springs reacting between said plungers and said inner clutch elements for holding the latter yieldingly outward relatively to the plungers, the plungers having at their inner ends oppositely sloping shoulders and the collar having correspondingly oppositely sloping shoulders for co-operating with the plungers respectively.

865,682. Wheel. Herman Cramer, Sonora, Cal., assignor to Cramer Wheel Company, San Francisco, Cal., a Corporation of California. Filed Feb. 12, 1905, Serial No. 245,476. Renewed May 21, 1907. Serial No. 374,846.

1. In a wheel, the combination with a spoke, and with the tire, of a casting in which the spoke is secured, a mass of rubber in said casting, and projecting beyond it, and projection secured to the tire and embedded in said rubber.

865,698. Rubber Vehicle Tire. John J. Hendler, Chicago, Ill., assignor to Tiger Tire Company, a Corporation of New York. Filed Sept. 20, 1905. Serial No. 279,220.

1. The combination with a vehicle wheel provided with a channeled rim, of a tire comprising an outer sheath of the clincher type adapted to said rim, a sealed inner tube provided with one or more inflating inlets and a filling of cellular cellulose compacted within said inner tube, substantially as described.

865,699. Rubber Vehicle Tire. John J. Hendler, Chicago, Ill., assignor to Tiger Tire Company, a Corporation of New York. Filed Sept. 20, 1905. Serial No. 279,221.

1. As a new article of manufacture, a vehicle tire of tubular form provided internally with a distributing tube perforated at intervals throughout its length, a filling of granulated cornstalk cellulose having the capacity to expand forcibly when moistened, interposed between the distributing tube and the exterior tube, and an inlet communicating with said distributing tube and extending out to the exterior of the tire.

865,743. Tire, William T. Wood, Nashville, Tenn. Filed Sept. 19, 1906. Serial No. 335,326.

1. A tire comprising a tubular casing, and a plurality of separate yielding supports located one behind the other within and connecting the inner and outer portions of the casing, said supports having separate lateral webs connected to the sides of the casing.

865,755. Self Igniter. Richard E. Berthold, New York, N. Y., assignor of one-half to William F. Holcombe, New York, N. Y. Filed March 28, 1907. Serial No. 365,137.

1. A self igniter, comprising a combustion chamber, an independent chamber or case attached thereto at the side thereof, means for retaining a combustible vapor producing medium in said combustion chamber, a material capable of catalytic action when brought in contact with said vapor, normally retained in said independent chamber or case, a removable closure for said combustion chamber and said case adapted to simultaneously close the combustion chamber and said case, said case closure supporting the material capable of catalytic action.

865,765. Wheel for Road Vehicles. Joseph Davies, Birmingham, England. Filed Aug. 25, 1906. Serial No. 332,059.

1. In a vehicle wheel, an outer metal tire or tread, a resilient tubular seating on which said tire is mounted, an auxiliary tire carrying said seating and an elastic cushion interposed between said auxiliary tire and the felly substantially as set forth.

865,767. Apparatus for Supplying Explosive Engines with Explosive Mixture. Charles G. Dean, Indianapolis, Ind. Filed July 28, 1906. Serial No. 328,208.

1. A vaporizer including a vaporizer body having an air chamber in one end and a valve seat in the opposite portion thereof, a valve spring pressed to the seat, there being an oil chamber about the valve between the seat an the air chamber, the vaporized body having two open passages therein between the air chamber and the oil chamber and an oil supply duct leading to one of the passages, and a check valve normally closing the oil supply duct to be opened for admitting oil to the oil chamber.

865,804. Rotary Engine. Samuel S. Sadorus, Sarilda, Idaho. Filed April 19, 1907. Serial No. 369,124.

1. The improvement in rotary engines herein described, comprising the piston and its shaft, a casing having a lateral wing and an inlet, a cover plate fitting over said wing, a cut-off valve turning between said cover plate and wing, and having openings movable into and out of register with the inlet, whereby to admit and cut-off steam, a shaft for operating said cut-off valve and gearing between the said shaft and the piston shaft, substantially as set forth.

865,851. Vehicle Carpet Holding Spring. Daniel F. Armstrong, Mallorytown, Ontario, Canada. Filed Nov. 30, 1906. Serial No. 345,832.

In a vehicle body and in combination with the sills thereof, of spring carpet holders secured to said sills, and having their points or portions of their bodies bent downwardly so as to impinge upon the carpet, substantially as described.

865,891. Rotary Engine. Ralph H. Heberling and William L. Heberling, Havana, Ill. Filed Oct. 25, 1906. Serial No. 340,528.

1. In a rotary engine, the combination with a rotary cylinder, of a rotary disc within the same, and connected to said cylinder so as to rotate therewith, said rotary disc having extending therefrom and rigid therewith a shaft forming an axis of said disc and which shaft is inclined relative to the axis of rotation of said cylinder.

865,901. Automobile. Evan Hyslin, Kindred, N. D. Filed April 9, 1907. Serial No. 367,182.

1. In a running gear, the combination with sectional axles and their casings, of a tubular reach casing connecting said casings at the middle and joined at its ends by vertical pivots thereto, a drive shaft extending through the reach casing and geared at the ends to the axles, and steering connections between the axle casings.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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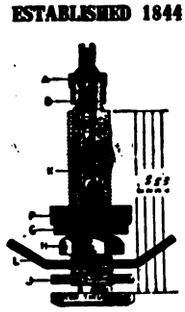
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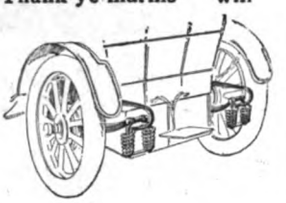
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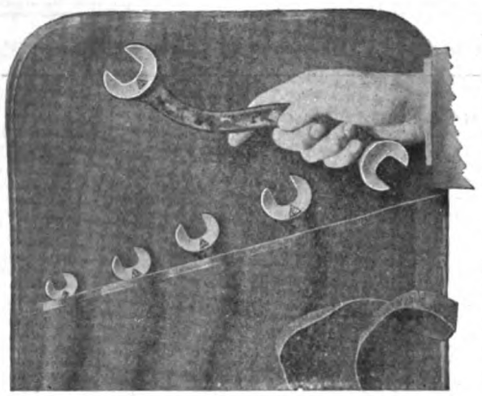
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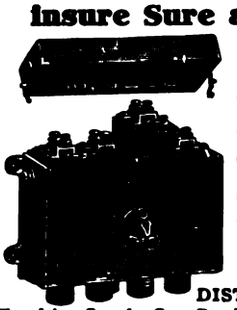
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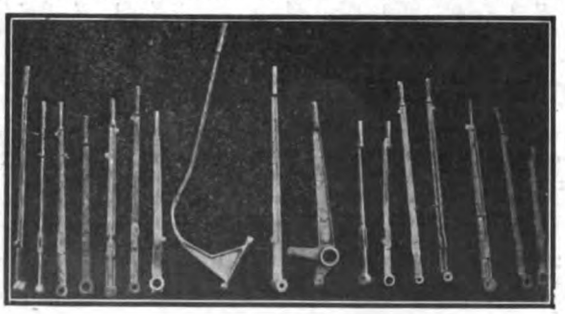
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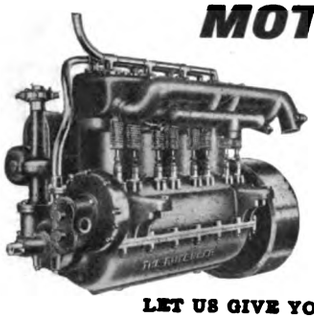
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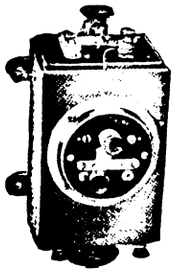
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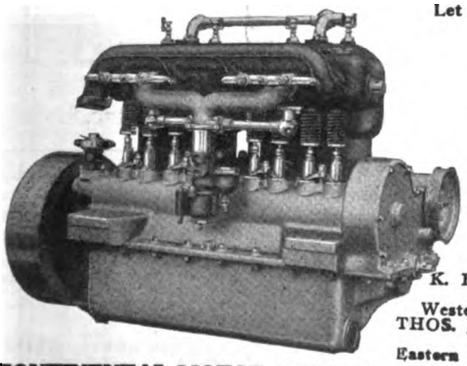
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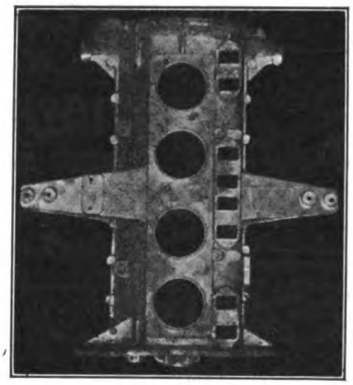
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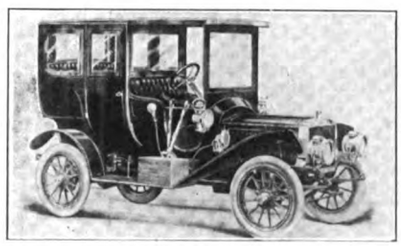
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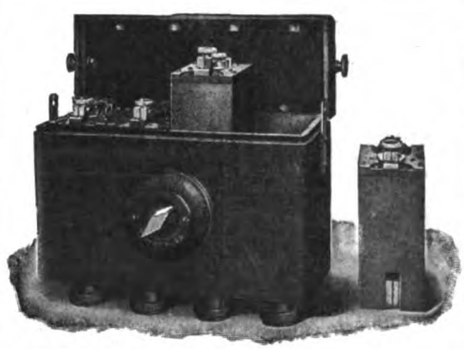


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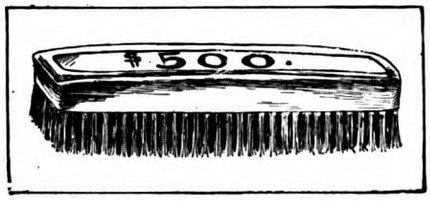
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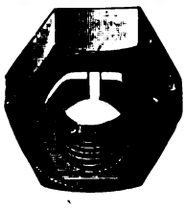
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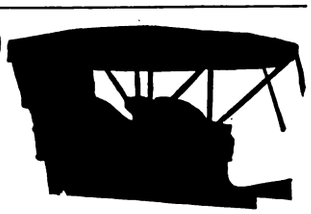
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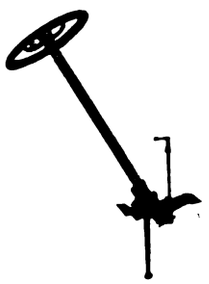
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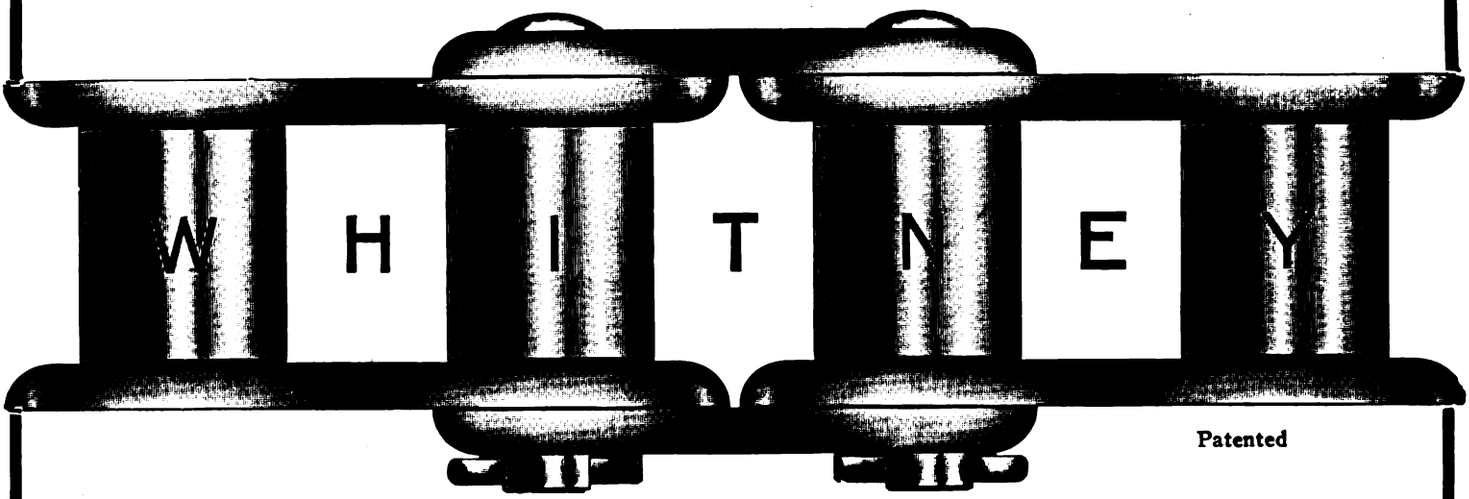
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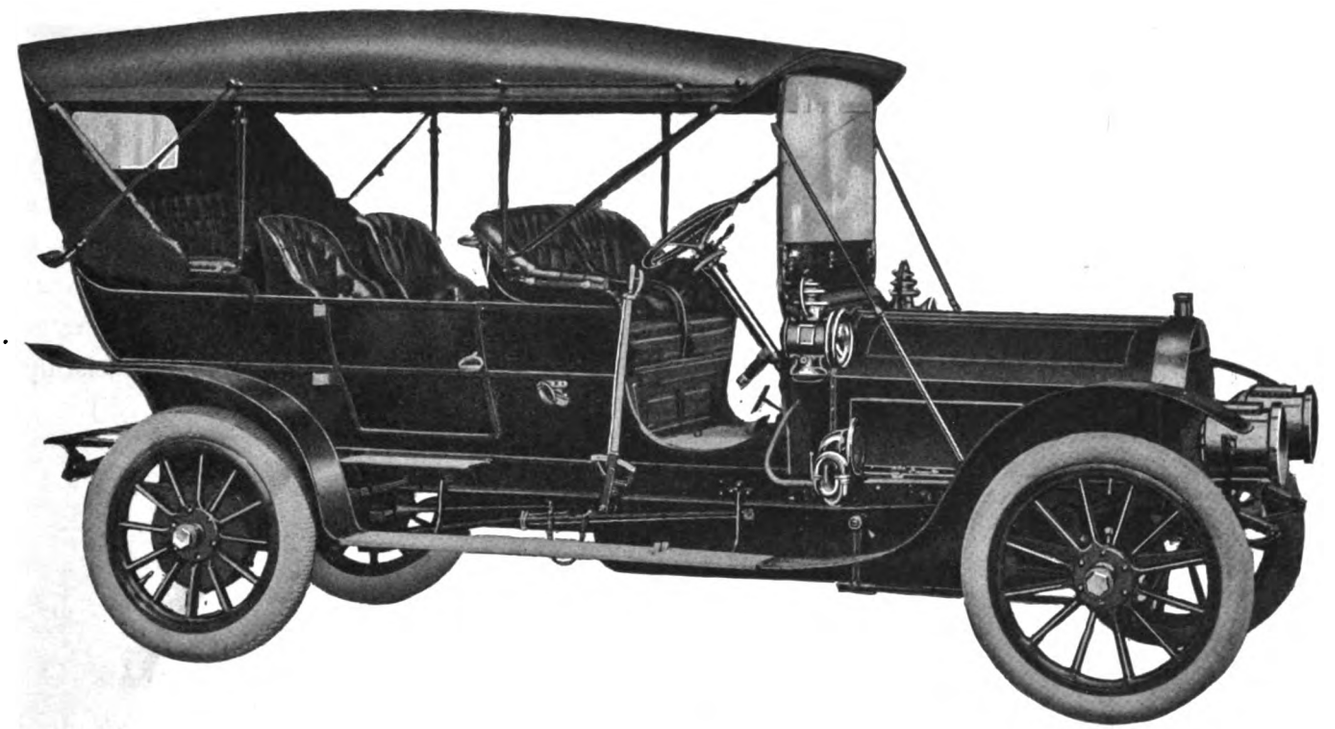
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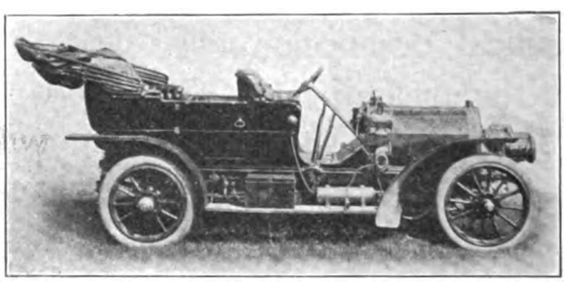
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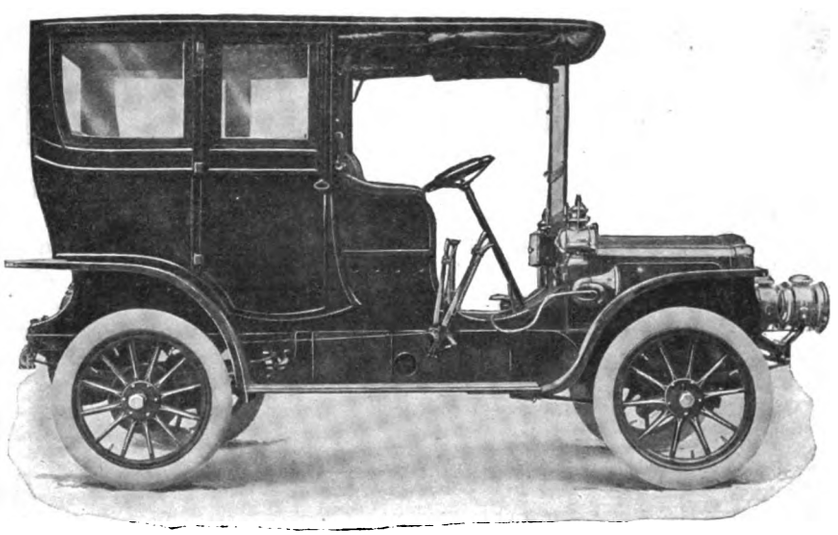
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The exclusive White quality of absolute noiselessness of operation is of particular advantage in a limousine because, in a car with a closed body, any noise made by the mechanism is even more noticeable and annoying than in an open vehicle.

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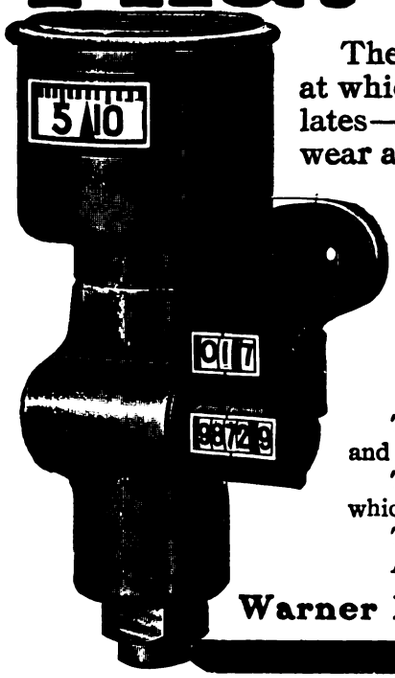
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When you consider the varied exhibits and large number of individual Exhibitors, this showing is most remarkable—yet it shows that more than half of them are of one mind, notwithstanding the fact that price is always secondary to quality with TIMKEN PRODUCTS.

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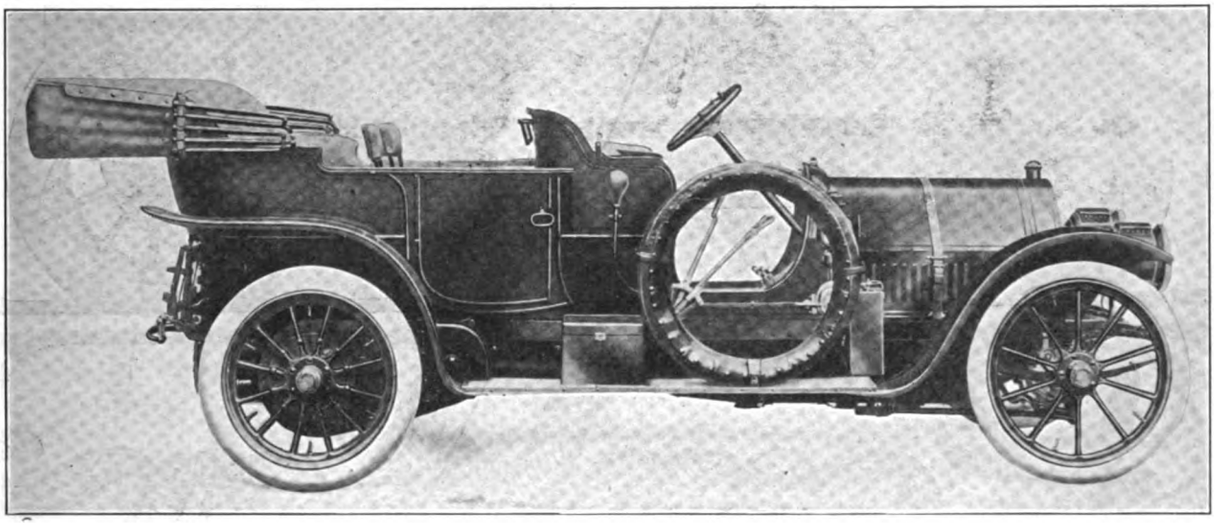
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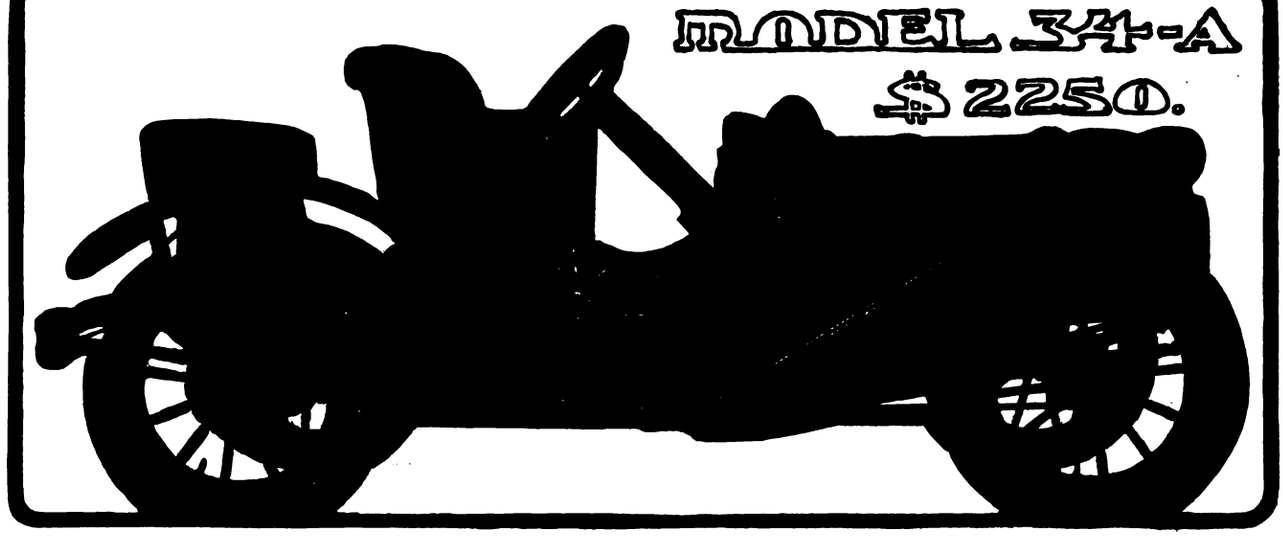
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Shrewd long headed dealers have been strongly impressed with the wonderful showing made by the Pope-Toledo at New York and Chicago Shows.

Live dealers in unoccupied territory are invited to correspond with us.

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The Car of Steady Service

If interested in a high powered touring roadster with every modern mechanical feature of practical value, such as offset crank shaft, straight line drive, direct from transmission gear to rear axle without an intervening joint, roller and ball bearings throughout the driving system and many others of equal value, do not miss an examination of the Rambler Model 34-A.

Compare this car in detail with any other offered at any price and you will readily see that we offer at $2,250 every item of practical value offered elsewhere at twice that price or over.

As a business proposition you cannot afford to pass this opportunity.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, December 26, 1907. No. 13

COLT'S CRIB SHOWS POVERTY

Brief and Breezy Career of the Company Leads to a Receivership—Alleged Transfers to Favored Creditors.

After a short and more or less merry life, the Colt Runabout Co. is now en route to the retirement of a stall in the bankruptcy stable.

Following the filing of a petition by the Frank Presbry Co., Robert Bosch, New York, Inc., and the Reliable Radiator Co., whose claims amount to $1,300, $400 and $174, respectively, Harry Osterman was appointed receiver for the concern on Monday last, 23d, inst. It is alleged that during the past three weeks the company has transferred to certain creditors practically all save about $500 worth of its property.

The Colt Runabout Co., which had an assembling plant in Yonkers, N. Y., and a store at 1876 Broadway, New York City, was incorporated in June last with capital stock of $10,000, which amount was increased to $50,000 on August 30th. William Turner was its president. The company early acquired a press agent and he made it appear that the Colt four cylinder runabout—which was chiefly an assembled car—was selling like hot cakes and that its low price was worrying every other manufacturer in the industry. It is known that at least two cars actually were produced.

Cleveland Changes Its Policy.

The Cleveland Motor Car Co has decided to dispense with agents and to market its product entirely through its own branches, three of which—New York Philadelphia and Chicago—already are in existence; other stores will be established in the other populous centers. Official announcement of this radical change of policy was made this week. The price of the Cleveland car has been reduced to $3,500, which price the makers say is rendered possible by the elimination of middlemen. They add that their decision to deal direct with the public was also influenced by the fact that they will build but 300 cars for the 1908 season, which number they think their own branches readily can dispose of.

To Build Buicks in Canada.

The McLaughlin Carriage Co., of Oshawa, Ont., which had intended to build an automobile of its own design. has changed its mind and completed a deal with the Buick Motor Co. to reproduce the Buick cars in Canada. To further the enterprise a separate company, the McLaughlin Motor Car Co., capitalized at $500,000, has been organized and incorporated to carry on the automobile end of the business. The McLaughlin Carriage Co. probably is the oldest and largest carriage concern in the Dominion, and its entry into the automobile industry is therefore in the nature of an event.

Spokane Sees a Factory Coming.

From Spokane, Wash., comes the apparently trustworthy report that N. C. Gauntt has arranged for the removal of an automobile factory—name not stated—from South Bend, Ind., to Spokane. The leading car that will be built will be one of 70 horsepower with six cylinders. The first of Gauntt's cars will be made in South Bend in January as the Spokane plant, the machinery for which is said to have been purchased, will not be in operation until next summer, at which time Spokane will celebrate as befits the occasion. Gauntt's identity or previous connection is not disclosed.

Hartford Merges Two New York Branches.

The Hartford Rubber Works Co.'s New York branch at 88 Chambers street, will be discontinued on January 1st, and thereafter the business will be concentrated in the uptown branch, which for several years has been located at Fifty-seventh street and Broadway. The Hartford company's downtown agency will now repose wholly with Charles E. Miller at 97 Reade street, who is well qualified to take care of it

DE DION SEEKS AMERICAN SITE

Several Cities Said to Have Offered Inducements—Albany Has Visions of an Addition to Her Factories.

Although it seems rather late in the day for a move of the sort, there are indications that the famous De Dion-Bouton Co. are seriously "prospecting" for a site for an American factory.

Accompanied by the statement that several cities already had offered inducements, the first definite news that the French manufacturers are seeking an American location came from Albany, N. Y., following a visit to that city of Count Manuel de Caserta, who is said to be De Dion's American representative, and Russell Hopkins, of Irvington-on-Hudson, who is consul for Panama and who is described as a financier. During their visit "up-State" they were guided by the industrial agent and other officials of the Delaware & Hudson Railroad, who pointed out several favorable factory sites and introduced the visitors to a number of Albany's leading business men, who in turn impressed them with the commercial advantages of that city.

The count did not commit himself in any way, but let it be known that the De Dion people are not seeking a bonus and also that no decision will be made until the American company, which is in prospect, is organized, and which, it is said, will be floated with French capital, although Americans will not be denied an opportunity to invest.

In Albany the impression was created that the DeDion works in France are overwhelmed with orders, many of them from America, and that an American factory employing about 3,000 men is desired to relieve the pressure, which impression does not exactly agree with other reports from abroad. The idea was also created that if a plant is located here, omnibuses and commercial vehicles will constitute its chief output.

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THE WEEK'S INCORPORATIONS.

Cincinnati, Ohio—Watkins Motor Works Co., under Ohio laws, with $10,000 capital. Corporators—Frank M. Watkins, W. C. Tunks, W. A. Watkins, F. C. Watkins, W. J. Davidson.

Dover, Del.—American Motordrome, Inc., under Delaware laws, with $500,000 capital. Corporators—F. Franklin Lamon, Philadelphia; George H. B. Martin, S. C. Seymour, Camden, N. J.

Dover, Del.—Mexico City Motor Cab & Omnibus Co., under Delaware laws, with $50,000 capital. Corporators—J. F. Mosby, New York City; A. A. Kelsey, Montclair, N. J.; J. Virdin, Dover.

Brockton, Mass.—W. H. Marble Automobile Co., under Massachusetts laws, with $50,000 capital; to deal in automobiles. Corporators—B. A. Hastings, president; W. H. Marble, treasurer, both of Brockton.

Rochester, N. Y.—Union Motor Car Co., The, under New York laws, with $15,000 capital; to manufacture automobiles and parts. Corporators—Edward C. White, Victor L. Kraft and A. Vernon Hart.

New York City, N. Y.—Cities Motor Cab Co., under New York laws, with $100,000 capital; to operate motor cars for hire. Corporators—J. B. Sabin, C. O. Bartwig, A. Czerweng, E. K. Heal, New York City; G. A. Denig, Upper Montclair, N. J.

New York City, N. Y.—Salvini Auto Horn & Tubing Co., under New York laws, with $30,000 capital. Corporators—Salvatore Salvini, 402 East 116th street; Giuseppe Brunelli, 235 East 114th street; Andrew Casazza, 13 Roosevelt street, New York City.

Oakland, Cal.—National Marine Water Autodrumbile Co., under California laws, with $500,000 capital; to make land and water automobiles. Corporators—Charles F. Hilden, Axel Gundersen, John J. Swensen, Herman Hansen, Victor Thoren, and Hans Johansen, San Francisco.

Prest-O-Lite Again Visited by Fire.

For the second time within six months the plant of the Prest-O-Lite Company, at East and Pearl streets, Indianapolis, Ind., was partially destroyed by fire and explosion Friday afternoon last, 20th inst. The entire loss is estimated at about $20,000. The exact cause of the explosion which started the fire is not known, but the deduction is that a spark from a buffing machine ignited escaping gas from a nearby filling machine. It is fortunate that the company had partially moved its plant to the new factory in South street, and therefore had only a few men working in the building at the time, else the loss of life must have been great. One man, Elmer Jessup, employed at the buffer, received burns from which he died the following day. A similar fire occurred at the plant on August 17th last, when the loss of $50,000. At that time 2,900 charged gas tanks were in the building, while last week there could not have been more than 200 or 300, as much of the material had been removed to the new factory.

Shock Absorber for Runabouts.

To meet the demand of manufacturers and owners of light powered runabouts, the Hartford-Suspension Co., New York, makers of the Truffault-Hartford shock absorber, have perfected what will be known as the "Truffault-Hartford Junior." This device is smaller than the two models which this concern has been manufacturing for several years and will sell for $25. It is intended to be fitted to such runabouts as the Ford, Maxwell, Mitchell, Reo, Atlas, Cadillac, etc. The company is now making three models catalogued at $25, $40 and $50, and with the addition of the "Junior," any size car can be equipped with this well known device. The "Junior" has all the essential features of the larger type and the only difference in its makeup is the size.

Incorporated to Produce Autodrumbiles.

The effect of the appearance in New York City some time ago of an amphibious automobile doubtless has been felt as far away as California. The National Marine Water Autodrumbile Company was incorporated at Oakland last week by several San Franciscoans. The company is capitalized at $500,000, of which sum $4,800 has been subscribed. Whether the Swedish government is interested in the venture or not is not stated, but it is certain some of Scandinavia has put up its hard earned coin, as evidenced in the names of the following incorporators: Charles F. Hilden, Axel Gundersen, John Swensen, Herman Hansen, Victor Thoren and Hans Johansen. The company will manufacture, it is stated, "autodrumbiles, which are automobiles equipped to navigate through streams of water as well as through muddy roads."

Appraisers for Electric Vehicle.

By designation of the court, Fred C. Billings and John R. Hills, of Hartford, have been appointed appraisers of the Electric Vehicle Co.'s property in the State of Connecticut. Messrs. Billings and Hills performed similar service for the Pope Mfg. Co.'s receivers.

Franklin's New Chicago Manager.

A. O. Hunter has been appointed manager of the Chicago branch of the Franklin Automobile Company. Previously, Hunter was head instructor of salesmen for the National Cash Register Co., with headquarters at Dayton, Ohio.

Mundy Sets up for Himself.

Harry H. Mundy, formerly of the Miller-Mundy Co. and the Utica Motor Car Co., Utica, N. Y., has set up in his own name as a dealer and jobber of accessories. He has located in the Utica City National Bank building.

IN THE RETAIL WORLD.

Woodward & Johnson have opened a garage at Arlington, Cal. A full line of supplies will be carried.

Fire damaged the garage of the Owen H. Fay Co., 243 Michigan avenue, Chicago, Saturday morning last, 21st inst. The loss is not stated.

P. L. Balentine will erect a two-story brick garage, 17x70 feet, at the southeast corner of McKean and Bancroft streets, Philadelphia. The cost, it is estimated, will be $2,000.

The Iowa Automobile Co, Des Moines, has plans for a new garage under consideration. The company has taken on three new lines—the Locomobile, the Autocar and the Thomas Flyer.

The West-Stillman Motor Car Co., of Philadelphia, has reorganized with Ed. W. Meers, president and general manager; Erwin West, secretary and treasurer, and H. B. Stillman, sales manager.

The Akron Garage Co., Akron, formally opened its new commodious garage on East Buchtel avenue, last week. The company will handle the Winton, Franklin, Premier, Oldsmobile and Baker electric.

Harry Windle and W. H. Nickerson have purchased the garage and business of George J. Donahue, at Brockton, Mass. They will take possession at once and conduct the place in connection with their Montello garage.

Lester C. Taurot and Herbert L. Abrams, Jr., doing business as the Larchmont Automobile Co., at Larchmont, N. Y., have filed a petition in bankruptcy. They give their liabilities as $2,268, and assets $341, in stock, fixtures and accounts.

W. R. Sherin, Arthur F. Borges and E. Wohlgemuth, all of Milwaukee, have associated themselves as the W. R. Sherin Co., and will open at 143 Eighth street, that city. Repair work will be taken but painting automobiles will constitute the chief work of the firm.

Bert Fuller, one of Salt Lake City's best known race drivers, and Carl Redman, have purchased the Wasatch Automobile Co., 57 Market street, that city. The company formerly was known as the Utah Automobile Company, but changed its name some time ago when A. E. Hyde, Jr., bought the business from Leroy Snow, who was at that time the owner.

In keeping with the general growth manifested in the automobile trade in Los Angeles, is the latest move of the Maxwell-Briscoe-Wilcox Co., agents for the Maxwell cars. The company broke ground last Monday for the biggest enterprise yet undertaken by a Los Angeles automobile company. The new building to be erected at Pico and Main will be the largest of its kind in California, it is claimed. It will measure 65x200 feet, containing available floor space to the extent of 13,000 square feet.

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REEVES ON CONDITIONS ABROAD

Despite Overproduction in Europe He Sees an Opening for America—Foreign Views of Shows and Races.

With eyes commissioned to see things for the manufacturers composing the membership of the American Motor Car Manufacturers' Association of which he is general manager, Alfred Reeves, after a seven weeks' trip in Europe, during which he viewed the Paris and London shows and peeked into some famous foreign factories, is home again with a complete stock of assorted observations and impressions as to conditions abroad. Reeves arrived last Saturday morning on the Kaiserin Auguste Victoria, but did not make his official appearance at his office until Monday morning, when he found his desk piled high with placards and garnishments hailing his return.

"Paris and London both presented wonderful shows," said Reeves. "and made it very plain that enough cars are being made to fill the European market to overflowing. There is no hungry waiting for American cars over there, but on the contrary, many of the European makers are looking longingly toward America with the idea of getting a fresh hold over here by making cuts in their prices that will put their cars in about the same figure as the corresponding American cars sell for.

"It is not to be thought, however," he continued, "that American cars cannot be sold abroad, because they can be. There are a number of American cars that would fill niches in the European market that the foreign makers are not equipped to provide for. Particularly is this the case with the dow priced cars. While most of the makers of the big cars are now also showing low powered cars as well, in the majority of cases they are not prepared to make them as cheaply and in such numbers as some of the American factories. The Germans are making the small low priced car their specialty and will offer the greatest competition in that field. In the big cars Italy is outdoing France. Between Germany and Italy, the former making small cars and the latter big ones, French makers are being hard pressed. They are fluttering about trying to make both and do not quite know where they now stand. English makers are turning out some splendid cars and in such a variety of types and prices as to greatly lessen the importation of cars either from the Continent or America.

"To sell American cars abroad requires a most careful study of conditions and a certain degree of adaptation to European methods. Whatever prejudice may exist against American automobiles is offset by the fact that through a familiarity with American shoes, cash registers and other goods, the public has been educated to a belief that American facilities for large quantity production are unequalled, and that, having learned many engineering lessons from Europe, we may be able to make cars to better advantage than the European makers.

"Whatever truth there may be in this view," Reeves went on, "is counterbalanced in the case of the large cars by the cheapness of labor. In some of the Italian factories in the mountains I saw women tending grinders and automatic machinery with all the skill of expert machinists for 60 cents a day or less, and the pay of the men is correspondingly low.

"Motor taxicabs appear to be quite a success," Reeves continued. "In Paris there are about 3,000 of them and the way they shoot through the streets would make your hair curl. A ride in one leaves you frightened and agitated the rest of the day. So far the managers think they are making money but in many cases it is very doubtful as the item of depreciation has received little attention. The motor buses have lost money, and it is not to be wondered at considering the slapdash fashion in which they are operated. Privately owned commercial vehicles are enjoying great popularity, and are being used to a much greater extent than on this side. There are all types, from light milliners' delivery wagons to heavy rigs for iron castings and coal. Except on the latter class of vehicles Paris has gone crazy over pneumatic tires. Horse-drawn vehicles and all vehicles use them.

"Shows are a vexed question in both France and England. In spite of all the discussion, however, the majority of the manufacturers agree that shows are necessary, but that the expense to the individual exhibitors must be reduced. When one sees the extravagance in the electrical displays and in the decorations at the different stands, it is easy to understand where it will be possible to reduce the cost for the future. In Paris all the streets approaching the Grand Palais were festooned for blocks with electric lights, not merely in strings, but whole trees full of them. At some of the stands the arches and signs for a single exhibitor must have cost over $5,000. This will probably all be done away with at future shows, and the American plan of having uniform decorations for the exhibitors adopted. The expensive outside decorations and electrical displays will also probably be abolished out of consideration for the exhibitors' pocketbooks.

"All the French makers want as many races as possible. Because of the number and variety of competitions last year nearly all of the exhibitors at the Paris show were able to placard their machines as winners of some kind. The Italians, too want plenty of racing, as it has been their racing triumphs that has brought them to the front. Many of them who are looking forward to having America take their surplus of cars, want to win a Vanderbilt cup race or make a good showing in Florida, and it is therefore probable that a great many foreign racing cars will be seen over here during 1908.

"Quite as much as in showing me what conditions are in Europe," continued Reeves, "my trip was valuable to me in disclosing what the conditions are not. The foreign makers are capable of supplying cars far in excess of the European demand and are in most instances looking for export outlets with more eagerness than are the American makers. Whatever American cars find any considerable favor on the other side are aided either by exceptional merit for the price, or peculiarly clever sales management. I feel that there are many things that we can learn from Europe and many more that Europe could learn from American practice, but that, in the words of a recently returned New York politician, it is a case of 'Hurray for us.'"

On the same boat with Reeves three other prominent American automobile tradesmen returned from similar missions on their own account. These were Walter C. White, of the White Co., of Cleveland; Howard E. Coffin, chief engineer of the Marmon Co. of Indianapolis, and a member of the A. M. C. M. A. technical committee; and Howard C. Coflin, chief engineer of the E. R. Thomas Motor Co. and the Thomas Detroit Co. Some of them dealt with the foreign situation far less gently and diplomatically than did Reeves, and indicated that conditions abroad, so far as the sale of automobiles is concerned, are distinctly bad, so bad, in fact, that the American situation is one of prosperity compared with it. According to their observations the foreign makers are "up against it," and do not know which way to turn. Their factories are in many cases running at only a fraction of their capacity and their unsold cars glut the salesrooms.

Coffin paid considerable attention to the engineering progress in evidence at the shows and elsewhere. He was particularly impressed with the Olympia show in London.

"In many respects," he said, "the Olympia show was more interesting than the Paris exhibition in its display of engineering advance and refinement. Many of the English makers are evincing a daring and originality that is quite refreshing, making it plain that automobile engineering has not as yet settled into a rut."

The White being one of the few American cars to have made already an indelible mark on the foreign markets, Walter White was pleased with the results of his observations.

"Although there is undoubtedly an oversupply of certain types of cars in the European market," he said, "the business in White steamers has been unaffected. We are constantly developing our foreign organizations and have recently opened additional branch houses in Edinburgh and Manchester."

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country an outlet or dumping ground for foreign built cars.

The boasted American faculty for factory management and large production on the interchangeable system is taken by the export enthusiasts as ground for the belief that American cars will ultimately enjoy a great sale abroad, since it would largely overcome the competitive advantage of cheap labor.

Altogether the prospect is a rosey one for the trans-Atlantic steamer lines, with cars being shipped in both directions. The only thing that mars the outlook for them is the occasional transplantation of a factory from one side to the other. In moves of this kind the foreigners have shown more confidence in America than the American manufacturers have evinced in the sales abroad. Although the reproduction of foreign cars in American factories from the original drawings and patterns has not been uniformly successful so far, yet still another foreign maker, no less a one that De Dion, is credited with planning an American factory, while the record of the starting of factories on the other side for the production of American cars is still blank.

There can be no criticism of any maker grasping whatever opportunities for export trade may come to his hand or of his deliberately planning to invent new ones. In a large way the expensive transportation charges across the ocean and the payment of customs fees would seem to be an economic waste for which the consumer must be correspondingly taxed. If the retail buyer does not ultimately "pay the freight" then the manufacturer must, and there is presented the possibility of the makers on either side of the sea ruining each other by sacrificing their products in a wild export scramble. The foreign maker who cuts his prices to create a sale in America is apt to find the prices cut abroad by the introduction of cars exported from America for sacrifice, and by a repetition and reciprocation of this happy process the markets on both sides can be demoralized.

Because of such tendencies it is much better that makers be encouraged to start branch or subsidiary factories in the fields where they think they see room for action than that they should be tempted into schemes for "dumping" their wares at at prices they would hesitate to accept at home. In shipping to great distances manufacturers are often weak in yielding to pleas for low prices or in falling victim to representations that although the goods have arrived they cannot be accepted at the original price and that the shipper can either grant the reduction asked or pay for the return with transportation charges both ways

For this reason projects like the De Dion enterprise are to be regarded with more kindly feeling than the various proposed import schemes. Nevertheless it must be said that in the face of showing made by the transplanted Mercedes and Napier, that it takes considerable confidence and bravery to undertake such a plan, which unlike the Berliet and Mors instances has no great plants already equipped to take it on simply as an incident to other activities That the proposed De Dion factory will make a feature of commercial vehicles will perhaps give it a more timely birth than if pleasure cars were to be its chief product and whatever battle it may give the established makers will be along legitimate lines rather than unsavory "dumping" of surplus products at long distance.

Where Owners are at Fault.

It is so very easy to blame the motor and then its maker, when for any reason the car refuses duty, that comparatively few owners make proper allowances for their own indiscretions in loading the machine before turning upon the manufacturer either directly or by way of his product. Formerly much of the discontent which was manifest at the behavior of the cars was properly aimed at the devoted head of the producer. Horsepowers, weights, capabilities and endurance were so grossly exaggerated that the reaction was natural and justly deserved in many cases, if not in all.

One of the most prevalent and disastrous causes of balking motors and rapid depreciation is this tendency to overloading, both in passenger and "dead" load. The custom of overpowering many machines has bred among owners a sort of blind confidence that a good machine will carry successfully almost any load which may be thrust upon it. Consequently the average owner invests in whatever suits his fancy and purse in the way of fittings and accessories, perhaps has a closed body built to his own designs by the nearest carriage builder, and taking in all the friends he has seating accommodation for, drives gaily away. Yet from the investigations of these weights, which are mentioned in another column, it is made to appear that the additional weight of the new limousine body may be between three and four hundred pounds over that of the body sold with the car, while similar studies of accessories previously quoted in these columns, show that a well stocked car in touring trim may carry a load of 250 pounds or so of utilities. All told the machine may leave the garage with some 600 pounds of dead load, or the equivalent of four normal passengers. The "friends" climb in after that, and all join in wonder and amazement at the way in which the car climbs or fails to climb the hills.

Makers of commercial vehicles are already beginning to recognize and provide against this tendency to overloading by giving their product a nominal mean rating with a guaranteed overload capacity. With the pleasure car this is undesirable and unnecessary in many cases. The tendency to overload any kind of a machine, simply because the machine will not complain is a natural and very human one, and one which cannot be obliterated with motor cars any more than it ever has been with top buggies.

COMING EVENTS

December 28-January 4, New York City —Importers' show at Madison Square Garden.

January 1-2, Philadelphia, Pa.—Quaker City Motor Club's endurance run to Allentown and return.

January 14-18, Hartford, Conn.—Hartford Automobile Dealers' Association show in Foot Guard Armory Hall.

February 1-8, Providence, R. I.—Show in Providence State armory.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory.

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association show in Central Armory.

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

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AMERICAN RIVAL FOR BROOKLANDS

Company Incorporated to Construct a Great Automobile Track Near Philadelphia —Glowing Forecast of the Plan.

Hail to the American Brooklands! Hats off to the motordrome that will surpass the great special track at Weybridge, England! Of course, it isn't actually in operation yet, but a small thing like that does not worry the promoters. The fact remains that the company to build the "world's greatest automobile track," has been incorporated under laws of the State of Delaware. The capital stock is a mere bagatelle—$500,000. Named in the papers are F. Franklin Laman, of Philadelphia; George H. B. Martin and S. C. Spencer of Camden, N. J., but these are not the men actually back of the plan to erect the greatest track in the world. Louis Bergdoll, a Philadelphia brewer and racing enthusiast, is said to be the presiden. of the American Motordrome, Inc., for such it is called, while William M. F. Magraw, residence and business not stated, is given the credit for having started the ball rolling.

It will be news to know that automobilists "all over the country are enthusiastic over the announcement that a real racing track is to be constructed" as divulged in a Philadelphia newspaper, for the $500,000 American Motordrome, Inc., did not take out its papers until last week. Also that "all the great automobile events in the United States will be held upon it and this city (meaning Philadelphia) will become the mecca for the foremost auto drivers of the world."

Here is a chance for people with money to spend to get in on the ground floor, and obtain some pretty lithographed certificates —frames for same at a small cost extra, of course—real cheap. It is proposed to conduct the motordrome by a club of automobilists, stock holders, who will be part owners in the course and "all that it holds." It is not thought that persons lacking automobiles but who have the price for stock will be barred from mixing with the fraternity.

William M. F. Magraw, whoever he may be, is entitled to all the credit for having conceived the brilliant scheme to construct the American Motordrome, Inc., right to close to Philadelphia, according to the paper that makes the announcement. Here is how it all came about:

"Mr. Magraw became convinced that automobile racing was certain to meet its death unless a track of the proper type was built. Accidents and fatalities upon the courses used, which really had been constructed for horse racing, made this plain to him long before the A. A. A. put itself on record.

"So he took a trip to England, visited the track at Weybridge and he came back home set upon building an oval even better here in Philadelphia. Upon his return to this city he found that the A. A. A. had taken action and that the autoists and automobile dealers and manufacturers were trying to discover a way to prevent the speed contests from dying out altogether.

"Consequently his suggestion looking to the building of a duplicate of the Weybridge course met with instant favor and the movement has now reached that point where only a few details need to be completed before the work of building can proceed.

"This will be carried forward during the winter and spring months, so that it is almost a certainty that the Motordrome will be in shape for its first meet in June next.

"To carry out the ideas of the promoters it is possible that an expenditure of half a million dollars will be necessary. That was the cost of the great English track."

Plans have even so far materialized that announcement of the location of the American Motordrome, Inc., has been made. It will be situated "on a track of land more than 200 acres in extent, out in Delaware county between the West Chester Pike, City Line avenue, the suburb Llanerch, and the beautiful grounds of the Delaware County Country Club."

It is stated that the track will be two miles in extent, constructed of cinder cement. At its narrowest point the American Motordrome, Inc., will be 100 feet wide, but at the turns, which will be banked at an angle of 30 degrees, there will be a width of 125 feet.

Automobile racing is not the only sport to be held on the grounds of the American Motordrome Inc. Far from it. In the inner oval such sports as baseball, football, the new diabolo, golf, tennis, ballooning; in fact, every outdoor sport will make it become a stadium for all sorts of outdoor sports.

The date and program of the opening meet are anxiously awaited.

Woman Qualifies for 15,000 Mile Club.

Mrs. Myra E. Roach, 3203 McKinley boulevard, Milwaukee, probably is the only woman in the United States who may lay claim to the distinction of having driven one two-cylinder car over 20,000 miles in three consecutive seasons. In establishing this long distance record, Mrs Roach demonstrated the economical qualities of her Rambler Surrey Type One. The average gasolene consumption was one gallon to every fifteen of the 20,000 miles. In the first season she drove 8,000 miles. During the following year her record was 6,000 miles, and in 1907 she drove it 6,000 miles more. Mrs. Roach, of course, has qualified for membership in the Rambler Fifteen Thousand Mile Club, into which Thomas B. Jeffery & Co. will admit only those of its thousands of users who have driven a car over 15,000 miles.

SHORT CARD FOR ORMOND BEACH

Arrangements for the Florida Sandfest Include but Few Events—Special Course for Long Distance Contests.

Unless other events are added between now and the week beginning March 2d, the date set last week by the contest committee of the Automobile Club of America, the Florida carnival, to take place on the beach between Ormond and Daytonna, will be short on events. Of course, the long distance races, of which there will be three, will consume considerable time but only four short distance events have been announced, these being at two miles, one mile and one kilometer, including the record trials at the various distances and the annual race for the Dewar trophy.

The first week in March was selected as the tide at that time of the year will afford from five to six hours daily of good beach, varying each day between the hours of 10 a. m. and 6 p. m., and as the long distance races will require the widest beach and the best hours of daylight this date was selected as being the only one proper to meet all requirements. The fact that the first week in March is the height of the Florida season had something to do with deciding upon this time. The weather at that time is more salubrious than in January.

Arrangements have been made to provide a 16 miles straightaway course with loops at each end, for the long distance events. The loops will be constructed of two-inch planking, furnishing a roadway 32 feet wide, and providing an easy curve by grading away the sandhills at the edge. The loops will be banked six feet high at the outer edge. The start and finish will be in front of the club house at Daytonna, where the grandstand and timing board will be located.

The program of events, as announced, consists of the following, but it is not stated upon which days the several events will be held:

Long Races.

For strictly racing cars, not exceeding 2,424 pounds, for the Automobile Club of America Cup; to re run under the Vanderbilt cup race rules. Distance, 288 miles (9 laps).

For "gentlemen amateur" drivers, invitation, prize and condition to be announced later. Distance 128 miles (4 laps).

International championship for the Minneapolis trophy. Distance, 100 miles.

Short Races.

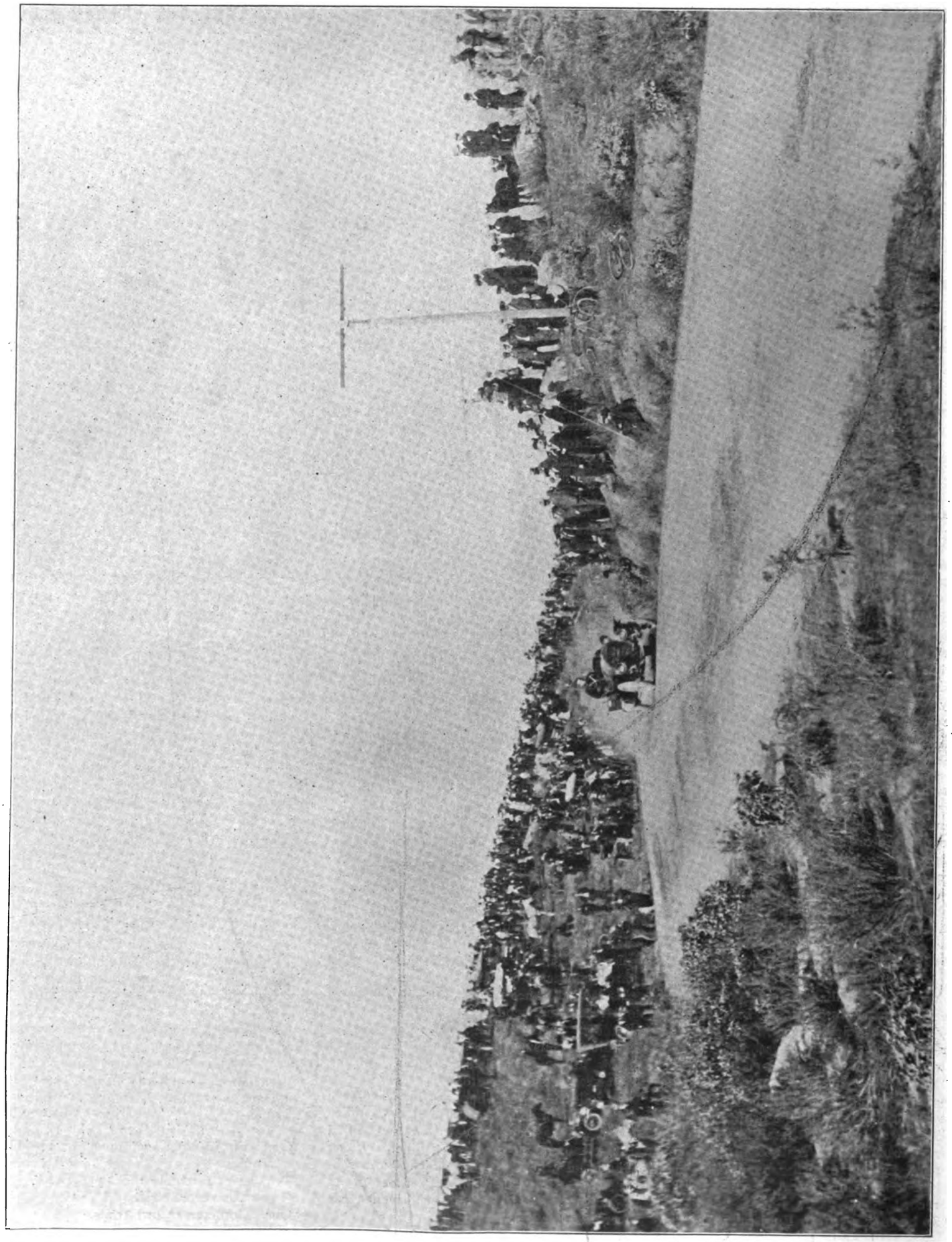
One mile international open for the Dewar trophy.

Two miles a minute race.

One mile record trials.

One kilometer record trials.

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THE FAMOUS BOX SPRINGS HILL, NEAR RIVERSIDE, CAL.

The Stoddard-Dayton Making the Ascent of the Four-Mile Grade in Record Time, 5:21½, on Thanksgiving Day.

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"TINKERITIS LEGIS" IN JERSEY

Automobile Clubs Formulate Suggestions for the Solons—Long List of Proposed Amendments to the Law.

As the legislative season approaches the annual itching to tinker with the automobile laws is making itself felt. The first evidence of it was disclosed at the meeting called by the New Jersey Automobile and Motor Club on Thursday last at which the delegates from all of the clubs in the State met and passed resolutions concerning changes which they think would improve matters. Chief among the suggested alterations in the law is a provision to permit motorists from other States to enter New Jersey without being required to take out a New Jersey license, the privilege to be extended for not more than ten days in two consecutive months for any particular car. That such a provision is highly desirable for the benefit of touring automobilists is apparent. The Jerseyites would also like to see a provision requiring lights on all vehicles, and their recommendations cover a number of other points as to speed limits, registration and other matters.

The full text of the resolutions as passed by the delegates at the meeting in Newark is as follows:

Resolved, That it is the sentiment of this club that a bill be introduced for passage by the Legislature requiring all vehicles, other than those included under the provisions of the motor vehicle law, when using highways of this State, during the period of time between one hour after sunset and one hour before sunrise, and whenever fog renders it impossible to see a long distance, to carry a lighted lamp showing a white light from the front and a red light from the rear, which lamp shall be attached to the left side of the vehicle; or to carry, suspended under the vehicle, a lighted lamp showing a white light in all directions.

That the motor vehicle law be so amended that automobilists in other States, desiring to tour in New Jersey, may be extended that privilege, provided it be for a period of not longer than ten days in any two consecutive months.

That the motor vehicle law be so amended that all licenses shall cease on December 31, 1908, and on December 31 of each year thereafter, and persons holding licenses which will not expire on December 31, 1908, shall be required to pay a pro rata amount for the renewals of same until December 31, 1908; also that the Department of Motor Vehicle Registration and Regulation shall furnish the identification number tag required by the motor vehicle law; that all tags shall be of uniform size and design, and that the design or color of such tags shall be changed each year.

That, owing to the number of accidents and deaths caused by the careless and reckless driving of automobiles, when in an intoxicated condition, the law be so amended as to not only revoke the licenses of persons when found to be in such condition, but that no new licenses be granted to them for a period of five years, and that heavy fines also be inflicted upon them.

That the motor vehicle law be so amended as to make the maximum speed as follows: Six miles an hour upon the sharp curves of streets or at the junction or intersection of prominent streets or thoroughfares; fifteen miles an hour where houses are less than an average of 100 feet apart; twenty-five miles an hour in the open country or where houses are at least on an average of 100 feet apart.

That it be made a misdemeanor to throw, place or deposit any glass or sharp or cutting substance in or upon the public highways of this State.

That the corps of inspectors of the Department of Motor Vehicle Registration and Regulation, acting under the provisions of the motor vehicle law, be increased to fifty, twenty-five to receive compensation as at present provided, and twenty-five who shall be automobilists resident in this State, to act without compensation, said inspectors to have the authority to properly enforce the automobile law, to arrest violators of same, and be under the supervision of the Commissioner of Motor Vehicles.

That the president of the Associated Automobile Clubs of New Jersey be requested to call a meeting of a committee of one delegate from each club composing the association, for the purpose of conferring with Senator Joseph S. Frelinghuysen and Commissioner J. B. R. Smith, to endeavor to secure their co-operation and support in having such amendments made to the present automobile law, when the Legislature next convenes, as have been discussed and favorably acted upon by resolutions at this meeting.

That the motor vehicle law be so amended as to make it obligatory for justices of the peace and police courts to turn into the State at definite intervals all fines collected under the motor vehicle law.

Farmer's Automobile That Pays for Itself.

Twenty days saved in the year is the way Chester Parker, of Cornish, Maine, figures out part of the advantage of owning an automobile. Parker owns a big produce farm and it used to require from one day to a day and a half to get from home to Portland and back when he had marketing to do. With his Cleveland touring car, which has displaced his two-horse team, he now makes the round trip in greatly reduced time. He gets his butter, eggs and other table delicacies to Portland always on time for the Boston boat, and in so much better shape than before that he realizes twenty per cent. better prices. The automobile already has paid for itself, he says.

SAVANNAH EAGER FOR RACING

Manufacturers Invited to Consider the Desirability of a Stock Car Tournament There—Course Already Provided.

That Savannah, Ga., really is being seriously considered as a location for a series of long distance races for stock chassis fitted with racing bodies, to be held during March directly after the Florida tournament, is made evident by the fact that President William H. Hotchkiss, of the American Automobile Association, has authorized a letter to be sent to the various manufactures, asking their views as to whether or not a stock car tournament is desirable and if so what races should be held.

Mr. Hotchkiss's action is the result of a visit of a committee of A. A. A. men to Savannah, at the invitation of the Savannah Automobile Club, to inspect the proposed course and to investigate conditions in the Georgia locality. The committee consisted of F. G. Webb, representing the racing board; N. H. Van Sicklen, of the technical board, and F. H. Elliott, secretary of the American Automobile Association. The committee states that it made a thorough investigation in Savannah and its report led the rules committee of the technical board to adopt tentative rules at a meeting held in Buffalo last Saturday, for suggestion to the racing board. These provide for a series of contests between strictly stock cars with racing bodies, for light cars, for heavy four cylinder cars, high powered runabouts and for six cylinder cars.

The investigating committee found that Savannah is truly anxious to hold an automobile tournament near that city during March next, and that the Savannah Automobile Club already has attended to nearly all the preliminary arrangements and has secured a course about 20 miles, or for shorter races, a ten miles course, the latter with long banked turns. The larger course has twelve turns but at least ten of these can be reconstructed and banked so that they may be taken at high speed. The road surface is hard save in one or two places, which can be fixed at slight expense.

Co-operation by the local authorities, including the mayor, presidents of the Chamber of Commerce and the Cotton Exchange, the highway officials, and militia commanders, besides of course, the committee appointed from the local automobile club, is assured. The highway officials promise to attend to oiling the course and fencing off the roadways intersecting it, while the military authorities have promised to furnish 1,200 to 1,500 of State troops to police the course during the progress of the tournament.

If the manufacturers consider the tournament advisable, to the extent of entering

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cars, it is planned to hold the meet during the second week after the Florida carnival. At this time spring is far enough advanced to insure good weather and roads, while the return of Southern tourists has begun. It is planned to have the meet last three days. A meeting of the racing board will be held in New York City next Saturday, 28th inst., when letters from the manufacturers will be read and a decision as to holding the suggested meet, probably will be arrived at.

Comparing Horse and Motor Delivery.

Hayden Eames, general manager of the Studebaker Automobile Co., says that the more he investigates the desirability of motor vehicle delivery as compared with horse delivery, the more firmly is he convinced of the superiority of the former method. With reference to a comparison of the two systems he says:

"The only way to arrive at a fair comparison between motor vehicle delivery and horse delivery, is to make an absolutely complete ledger statement of what it costs to do the work conveniently with horses, including rent of stable space, insurance, interest on investment, and every part of a financial accounting. Then, having obtained a thorough knowledge of precisely what service is required, and what the limitations of that service are, proceed to draw up specifications for a corresponding power wagon installation, or organization, to do the same work. Having done this, prepare an accurate ledger statement of the expected performance of this second installation, and compare the two. When the power wagons are properly selected and applied, it is an extremely rare case when the advantage of the power wagon ledger sheet is not overwhelming."

Australian Non-Stop Road Record.

What is claimed as a non-stop road record was made on November 21 and 22 in Australia, by H. L. Stevens and H. B. James, in a 40 horsepower car, when they covered 777 miles in 24 hours. There are no automobile or large trotting tracks in Australia suitable for automobile racing so that the record breaking aspirants had to map off a course over a limited area of roads. Australia being a wild country, in that the roads are not as good or as free from roving animals as those in America, the feat of driving at a mile a minute race through a foggy night was really remarkable. One of the noteworthy incidents of the ride was the great number of rabbits and birds which fell victims to the speeding car. Plovers sometimes escaped destruction when surprised, but magpies were slaughtered wholesale, and hundreds of rabbits were killed during the night, a fact that did not become known until the course was recovered in the morning. Another feature was that not once was mechanical or tire trouble experienced during the 777 miles run.

CUP FOR MOST POPULAR DRIVER

To be Awarded by Vote of Contestants in Philadelphia Endurance Run—Program for the Quaker City Contest.

There is a chance for some automobile driver to win a cup by playing the good samaritan act in the forthcoming New Year's-and-the-Next-Day endurance run of the Quaker City Motor Club, from Philadelphia to Allentown and return. Instead of providing only two classes, as in last year's contest, the committee has divided the entrants into four classes—touring cars, high-powered runabouts, small runabouts and a go-as-you-please division. There will be prizes for the winner in each division, but the cup in the free lance brigade will not be for the best score, but will be given to the most popular driver in it, to be determined by a vote of all those on the run.

The run will last two days, January 1st and 2d, the contestant leaving Philadelphia at 9 a. m. Wednesday and starting from Allentown at the same time on the following day. On the going trip on New Year's Day there will be four controls, including the night stop at Allentown. These will be located at Doylestown. Ottsville and Easton.

On the return journey on Thursday five checking stations will be located at Kutztown, Reading, Pottstown, Norristown and Philadelphia. The distance for the first day is 78.9 miles and for the second day 93.7 miles, making a total mileage of 172.6.

According to the committee interest in the run this year is by no means confined to Philadelphia. Entries are expected from other cities and it is stated that all the towns along the route are planning to welcome the tourists as they pass through. Some of the towns have nothing more than the arrival of the mail to stir them from their Pennsylvania lethargy, so it is not surprising that they should make a fuss over the passing of an automobile tour. Allentown, it is said, will spread itself to entertain the tourists, a turkey dinner with all the "fixin's," a theatre party and a dance arranged by the girls of the place, being among the inducements to enter the run.

Why the Ride was Postponed

With no recognition of the conveniences of life, rude and unfeeling constables just ruined the social plans of Miss Stella Plotke, of St. Louis, on a recent evening by taking possession of her automobile. Miss Plotke had arranged to take a party of friends out for a spin in her electric machine, but when she called up the garage where it had been left for charging, she was informed that the machine was not there. As a result of her agitated questionings she learned that some constables, fortified with an imposing warrant, had taken it away. Miss Plotke was indignant and roundly took the garage manager to task for letting any one take the machine without her order. The garage manager submitted that it was only in obedience to the authority of the legal papers that he had permitted the machine to go. The automobile party was called off temporarily and Miss Plotke set about recovering her machine. She was surprised to learn that her $1,500 automobile had been taken as security for a miserable repair bill of $45 which she had quite overlooked paying, although it was incurred last October. To get the vehicle back she at once tendered her check, but actual cash was demanded and subsequently produced. The automobile party was given one day later than originally planned.

Luxury for the Hobo.

Luxury of travel for the hobo, the tramp and the bum has been greatly increased by the growth of the automobile business. In their transcontinental travels the gentry belonging to these honored orders have in the past accounted themselves fortunate when they could crawl into a "side door Pullman" containing straw or other soft material on which to sleep, as the freight trains dragged their slow and painful way across the western deserts and mountain ranges. But the journey to the Pacific Coast is now one of ease and delight owing to the large shipments of automobiles that nearly every west bound freight has in its list. By gaining entrance to a car containing automobiles the non-paying traveler secures for himself a berth that in comfort beats the real Pullmans. The heavily padded leather upholstery of a motor car tonneau makes a soft and pleasant bed and the springs of the automobile and the padding taek away all the jars and vibration that ordinarily accompany freight car riding. If a hobo be fortunate enough to find a car carrying a large limousine body touring machine, then indeed is he provided with a bed fit for a king, and he will almost go out and buy food at various stations where the train stops rather than stop over for any pan-handling and take the chance of not finding another stateroom as luxurious.

Club Members as Road Inspectors.

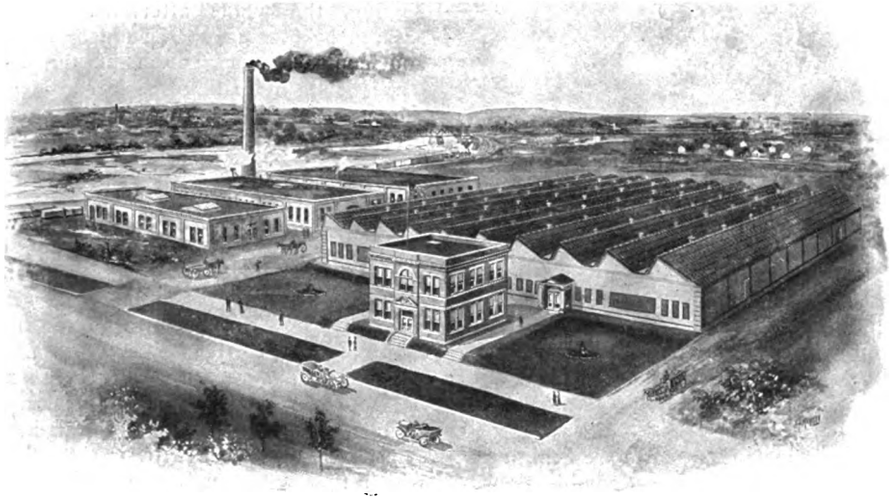
That club members make it a regular practice to observe highway conditions and report any defects existing within their immediate territory to the club officers, to be compiled in the form of complaints to the proper authorities, is a suggestion which is being considered by the members of the Lancaster (Pa.) Automobile Club. The club is carrying on a vigorous good roads campaign and the scheme of putting all the members to work as "spotters" resulted from similar services which have been rendered to good advantage by specially appointed committee of members of the club.

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WARNER'S DUST PROOF FACTORY

New Plant for the Production of Autometers a Model of Modern Construction—Its System of Ventilation.

Washed air, white paint and floods of light, together with a line shaft system mounted on ball bearings, are some of the features of the new plant of which the Warner Instrument Co., of Detroit, Wis., has taken possession. It is to be a "show place" for visitors, as an example of the most modern factory construction. The building is of reinforced concrete and, as shown in the illustration, has a roof of the saw tooth variety, the vertical sides of the teeth being fitted with prism glass. The main shop is 100 by 200 feet



WHERE THE WARNER INSTRUMENTS ARE MADE

The interior walls and the slant of the saw teeth are plastered with snow white rock plaster and all exposed cement work is surfaced with a specially prepared white water paint. The entire shafting system is also painted white, including the pulleys, the object being to reflect and make available for the workmen every ray of light. All doors and windows are kept closed winter and summer and there are no ventilators in sight. The ventilation is effected by an air blower system which draws in fresh air from the outside by mechanical power. On its way into the building all of the air is passed through a fine spray of water which washes out every particle of dust, thus making the inside of the factory as nearly dustless as it can be. After passing through the water spray the air is either heated or cooled, according to the season. Every provision has been made for the comfort of the employes. Large lavatories and locker rooms have been built, 32 by 40 feet, and fitted in the most sanitary manner.

In addition to being painted white, the power shafting system is rather out of the ordinary in other ways. It is mounted on channel iron beams fastened to special cast iron brackets which were set in proper position in the concrete during the construction of the building. Genuine imported D. W. F. ball bearings are used. This results in such a reduction of friction that a stretch of 100 feet of shafting weighing nearly 700 pounds can be turned easily with the thumb and finger, without a pulley.

Care of Acetylene Generators.

A cold weather admonition which, despite its comparative importance is seldom voiced, is that regarding the care of acetylene gas generators. The motorist of experience seldom neglects to attend to the jacket water in his car when the temperature is very low, either draining it off when the car is to stand unused for any length of time, or infusing a proper amount of anti-freezing mixture into it. The water retainers of gas generators are not always given the same attention, however, and the result is apt to be disastrous to the thin metal composing them. Except when the lamps are to be burned immediately, the containers never should be filled with water if there is any danger of freezing. When in use, the heat of generation, usually is sufficient to overcome any such tendency.

Wyoming Produces a Wonderful Gear.

The latest world beater is from away out in Sheridan, Wyo. According to a dispatch from that dot on the map, Walter Scott, a machinist, has refused an offer of $25,000 for an invention by which he claims "to have perfected a new gearing for transmission of power on automobiles, whereby the usual jar and jerk, when a change is made from one speed to another, is entirely done away with."

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

BODY WEIGHT AND ITS FACTORS

Specimen Specifications of the Load Imposed on the Machine—Why Stated Weights are Misleading.

As is frequently pointed out the inaccuracy of the power ratings given their motors by many makers often are no greater than the inaccuracies in the stated weights of the machines as a whole. In many cases this latter inexactitude may be produced in part by the owner himself, through his habit of overloading the machine with accessories. In other cases it may be laid to other causes also largely beyond the control of the maker. The most common of these is the use of a different body from that of the stock car, or one which has been increased in weight through alterations of various sorts.

The subject of body weights is an exceedingly difficult one to get at with any degree of specific exactitude, owing to the sensitiveness of many of the makers, which precludes the possibility of getting thoroughly comparative data. The following material which has been compiled by the foreigh authority which recently investigated the weights of accessories, as told in these columns, is sufficiently representative to illustrate the point in question, however. The weights are stated to be those of the product of a single maker, and therefore cannot be taken as of material value except in a relative way.

For open side entrance bodies the following weights are given:

	Pounds.
18 h. p. Standard Tulip, unpainted, with body irons, but without footboards	224
Footboards, with rubber and step edging	37¾
Standard set of iron wings, with stays, platform, steps, and brackets	73¾
Trimming, including cushions	90
Weight of body complete	425½
30 h. p. ditto, with iron panels and usual body irons	206
Equipments as above	201⅗
Weight of body complete	407½
30 h. p. Roi des Belgas, unpainted, with aluminum panels and usual body irons	224
Equipments as above	201½
Weight of body complete	425½

For standard extension cape hood, including joints and fittings for either of the above, add 53
For standard screen, add 13¾

For closed bodies, on the other hand, the weights are:

	Pounds.
18 h. p. single Landaulet, unpainted, fitted with usual body irons, without footboards	353
Footboards	15¾
Standard set iron wing frames only, with stays, platform, steps, and brackets	71¼

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Leather for wings .....
Trimming, with cushions, in
head leather .....
Glass frames, with glass and

Weight of body complete

18 h. p. three-quarter Landa
Limousine, unpainted, with
body irons, without footboa
Equipment as above .....

Weight of body complete

30 h. p. Standard Limousine, u
ed, with usual body iron
without footboards .....
Equipment as above (less
leather .....

Weight of body complete

If either of above is fitted wi
tension canopy, with front
and usual standards, add ....

"The weight of the paint and v
anything between 15 pounds and
according to the size of the c
number of coats applied," states
"It does not follow, howeve.
greatest weight of paint is pu
best finished carriage, because
the commoner bodies the def
painting are made good by lea
that a fairly smooth surface n
sented for the finishing coats of
varnish."

Acetylene Gas as a Possible

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internal combustion motor in pl
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has taken out patents on a sys
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nary manner. Another investig
Taber, of Syracuse, N. Y., it ap
also been studying the problem f
ber of years, submitting his ide
Patent Office just at the time whe
patents were being issued. The
flicted, and the Taber invention,
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Several interesting facts were br
in connection with the inves
among them the point that with
the spark can be advanced muc
than with gasolene without any p
pounding, and also the apparently
dictory one that the explosi
quicker, as well as more violent.
set of tests, it was found that goo
could be obtained from a mixture c
of 3 per cent. acetylene and 97 p
air—a ratio which, in itself prov
clusively the tremendous volu
energy latent in the acetylene, as
explaining the rapid evolution of h
the combustion is in progress. Th
sults, however, must be considered
plying only with the carburetter u
the test. With other mixing devices
different results might be achieved.

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nning. For the second se-
ry valve spring was slightly
or the third, it was still fur-
The tests under (a) and
series, were made with the
er jacket hot after a run.
the second series was also
engine hot. The tests (b)
and third series was also
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first series, the combus-
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de in the way of getting
bustion. The proportion
on the second trial ap-
large.

ese are interesting as
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a light load. The car
level with the throttle
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hich was reduced on the
o 4.2 and 2.4 by altering
the valve. In this case
auxilliary valve notably
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(d), where the throttle
arters to full open, and
g a hill, the proportion
as 3.6 per cent. for the
l 2.2 per cent. for the

(d)

r climbing a hill; en-
ne running about 1,000
vs. per min. Throttle
ll open or over three-
uarters open.

First eries.	Second Series.	Third Series.
3.6	3.6	2.2
1.2	1.3	0.8
0.4	0.3	0.3
Trace	Trace	Trace
11.7	12.2	11.8
0.1	None	0.6
83.0	82.6	84.3
00.0	100.0	100.0

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third. A material improvement was also made by altering the adjustment

"The condition of the third day for tests (b), (c) and (d) was the best. The carbonic oxide was respectively 1.8, 2.4, and 2.2 per cent. It was obvious that on the third day more air was admitted in proportion to petrol, because the free oxygen rose from 0.1 to 0.6. Running light, too, on the third day, trial (c), the free oxygen had risen to 2.2 per cent., with a carbonic oxide of 2.4 per cent.

"From these tests it appears probable that many cars must be running upon the road as ordinarily adjusted, discharging as much as 7 per cent. of carbonic oxide into the atmosphere. That this is not peculiar to my own car, I am aware from my knowledge of the Royal Automobile Club tests, and further, the directors of one important firm have been good enough to send me an account of experiments made by them with their own cars as to exhaust gases, and I find that at full load, with a particular engine, very similar variations occur, the carbonic oxide sometimes sinks as low as 0.8 per cent., and sometimes rises as high as 3 per cent., whereas, with light load, the carbonic oxide appears to sometimes attain from 6 to 8 per cent."

Apart from considerations of the healthful influence of purifying the exhaust, however, the question of fuel economy also should be taken into account, he thinks, although the less important of the two.

"Taking the analyses under (c), first series, where the maximum amount of carbonic oxide is shown in my experiments, I have calculated from that analysis how much of the total heat of combustion of the petrol is wasted by throwing away unburned gases. An examination of the analyses proves that 30 per cent. of the total carbon present in the original petrol is discharged as methane, so that nearly 35 per cent. of the original carbon in the petrol has been incompletely burned, or not burned at all. In this same case 27 per cent. of the total hydrogen in the fuel remains unburned. Calculating from these numbers the losses, I find that nearly 30 per cent. of the total heat possible on combustion is not evolved at all, because of the existence of inflammable gases discharged in the exhaust products. This is the worst case on Table I.

"Take now the best test under (d), third series. Here the engine was well loaded. Even in this case 17.6 per cent. of the total carbon is present in carbonic oxide and methane, and 6.7 per cent of the total hydrogen in methane and free hydrogen. This gives a loss of 10 per cent. of the total heat, due to incomplete combustion. In the best example, therefore, upon this sheet only 90 per cent. of the total heat of the fuel can be utilized in the engine.

"This 90 per cent. of heat evolution in the engine is a very good result, having before me the tests made with all the cars examined by me. Of other cars examined, the best gave 95 per cent. heat evolution, 5 per cent. waste due to imperfect combustion, and the worst gave 60 per cent. heat evolution and 40 per cent. heat discharged in the exhaust gases, due to imperfect combustion. Undoubtedly practically perfect results can be obtained, when petrol is properly proportioned to air. This is clearly seen from some interesting experiments described by Professor H. Hopkinson, of Cambridge, and Mr. L. G. Morse, in a paper read before the British Association this year."

After discussing these experiments which, he says, are valuable as showing that an engine adjusted for maximum thermal efficiencies at full power discharges a practically innocuous exhaust, he continues: "An engine so adjusted may also have an innocuous exhaust at lighter loads, but this by no means follows. It depends on the nature of the adjustment made by the compensating contrivance working in connection with the carburetter, whatever that compensating contrivance may be.

"All these compensating contrivances vary with varying speed. This, of course, gives some adjustment, but that not all that is required. An ideal compensating contrivance should vary not with varying speed, but with varying quantity of mixture drawn in in a given time. In a car running on the road, for example, the speed of rotation of the engine may be kept perfectly constant, but the position of the throttle will vary from point to point of the road; that is, the engine speed may be constant, but the volume taken into the engine may vary within large limits. As the problem is to charge any given volume of air passing into the engine with a practically unvarying proportion of petrol vapor in a uniform manner, it seems to me that all systems of speed control must fail to obtain proportionality throughout the whole range. If the entering air could be made to drive a fan similar, say, to an anemometer, with proper precautions, this fan or anemometer could be made to run at a speed of rotation very closely proportional to the volume of air supply throughout the whole range of conditions. If a spindle be driven by this anemometer, and a small chain passed from that spindle into a petrol vessel at constant level, then it would be possible to work out a carburetting contrivance which supplied the air passed through it on its way to the engine with petrol exactly in proportion to the charge volume taken in. I believe contrivances of this kind have been proposed, and it seems to me that although we have practical difficulties, if correctly carried out, they should be able to give a perfectly uniform mixture to an engine under all conditions of speed variation and charge volume variation. . . . .

"The most important point apparent from these analyses is this: that complete combustion by no means follows because of excess of oxygen. That is, we may adjust a carburetter in such a way as to give a substantial excess of oxygen throughout its whole range, and yet we may not succeed in suppressing carbonic oxide or completing combustion. . . . .

"It appears to me that in working out exhaust analyses for comparison of the merits of different cars or different adjustments, the total fuel consumed should be tested in any given experiment, and from the exhaust gas analysis there should be calculated the proportion of that fuel which is rejected without burning. This alone gives the true standard. Under each circumstance of the test, cars tried in this way would show that for a given amount of fuel burned the car discharged, say, so much weight of carbonic oxide or so much volume of carbonic oxide per minute from the total weight or volume of fuel given to it. . . . .

"So far, then, as my experiments have carried me at present, the folowing conditions appear to produce imperfect combustion:

1. Too rich mixture with insufficiency of oxygen.

2. Too weak mixture with excess of oxygen, but too slow a rate of ignition and combustion.

3. Irregular mixture—mixture supplied too rich in composition at one part of the stroke, and too weak in another; that, is, bad mixture.

4. Engine and carburetter cold. This tends to cause imperfect combustion, due partly to low temperature, due partly to bad carburetting.

5. Improper timing of ignition, and missed ignitions.

6. Ignition in the body of the cylinder, instead of in a port. This will produce imperfect combustion at light loads.

"To get the best and most rapid combustion, at light loads, it is, in my view, desirable that the charge should enter the cylinder by way of a port of some little length, and that the ignition of the charge should be accomplished in the port itself, and not in the cylinder. By so combining the carburetter and ignition contrivances, I believe that a quite innocuous exhaust could be obtained, under light and heavy loads at all rates of speed, with a great saving in fuel consumption and wear and tear of the engine.

"It is well known that engines igniting in the port are more flexible. The reason of this is obvious. As the charge is reduced in volume, the proportions of exhaust products in the engine are not so reduced. They remain not quite, but nearly constant, in volume and weight Accordingly, as the load becomes less and less, the effective charge added becomes more and more dilute, and the mean mixture soon passes the firing point. By igniting in the port, a pocket of rich mixture is retained to the last, and this rich mixture, if fired sufficiently early, produces a practically complete combustion in the weaker mixture filling the cylinder."

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REDUCTION OF PISTON WEIGHT

Why It is Desirable and How It May be Secured—Two Devices of a Typical Character.

It is extremely difficult for the layman to appreciate how much difference in the power and smoothness of action of the internal combustion motor may be brought about by suitably lightening the moving parts. In the main, the improvement is due to the reduction of the inertia of the reciprocating parts—itself objectionable because they must be stopped and reversed in their direction of motion twice in the course of every revolution of the crank shaft. Any discussion of the benefit derived from lightening the pistons and connecting rods, must relate to this rather than to the reduction of the total weight of the motor, of which their weight forms an inconsiderable part. The piston being the heavier of the two, it is most desirable to reduce its weight as much as possible, and on this account mainly, not a little effort is being exerted abroad, in an effort to evolve a suitable pressed or cast steel piston.

As to the desirability of reducing the piston weight as much as possible, a French expert explains that "as the movement of the piston is periodically accelerated and retarded it necessarily follows that the effect of its inertia tends to retard it during the first half and accelerate it during the second half of its stroke. This being so, this curious conclusion can be drawn, namely that running fast and completing its compression stroke a piston is driving, or is tending to drive, the fly wheel. In the same way, the thrust of the explosion rapidly diminishes from the moment of the ignition."

"Owing to the great amount of friction set up by the forces of inertia, they do not by any means return the power required to overcome them, and soon exert a considerable influence on the efficiency of a motor amounting almost to the effect of a brake at high engine speeds," he continues. "Whatever may be said to the contrary, the possibility of constructing engines capable of very high speeds is greatly to be desired. Such possibilities will reduce weight cost of production, complications, and also weight of transmission devices.

"The effect of lightening the piston is at once to reduce the stress of the connecting rod, allowing this member itself to be less weighty, and so adding to the efficiency of the motor.

"The adoption of these light steel pistons has another recommendation, and that is the use of metal in such a way that porosity, uncertainty, and flaws peculiar to cast iron are entirely avoided"

Turning to methods of constructing light pistons which are already in use, he continues:

"As early as 1898 M. Barbaroux, works manager of the car department of the Delaunay-Belleville firm, led the way in this direction by taking out an interesting patent. The form of piston then covered by him, and which is shown in Fig. 1, owes

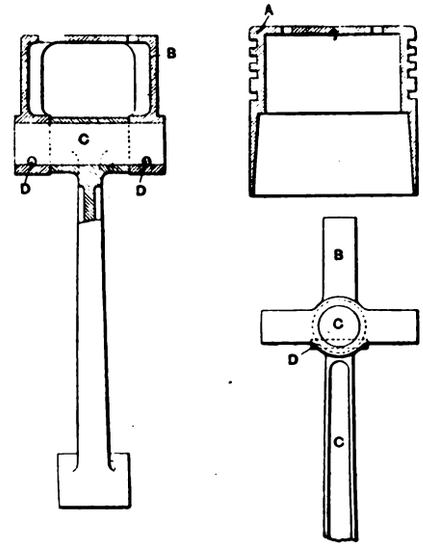


Fig. 1

its lightness to the method of fitting the gudgeon pin. The body of the piston, which was in cast iron, but could be easily made of pressed steel, was capable of being turned inside and out, and so its weight was reduced to the uttermost. The gudgeon C was carried in the circular lugs of a ring-based fork, to which it was secured by the tapered pins D D. This ring-based fork

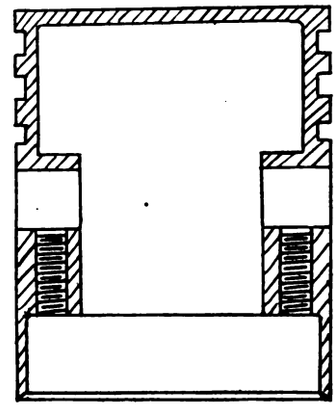


Fig. 2

was set in and riveted to the crown of the piston by the holes shown in each, the ring portion fitting tightly into the lower tapered mouth of the piston. This piston was both easily and cheaply machined and assembled, while the gudgeon pin was most securely carried and fixed. In the case of any breakage of the gudgeon pin or the securing keys the cylinder walls were not scored. Later developments resulted in pistons of similar design pressed in one piece."

But in the pressed steel piston he believes rests the successful light piston of the future. One such is produced by the Société de Montbard-Auluoye, who have obtained most satisfactory results with it, as he asserts. "Fig 2 shows a section of a piston made by this firm in 'acier de nuance,' and, being hot, perfect homogenity of the metal is ensured. By the use of pistons so formed all the troubles which are alleged to follow in the path of the employment of cast iron pistons are avoided.

"After considerable use cast iron pistons are prone to fracture round the open edge—a failure which may result in costly repairs. The use of pressed steel pistons avoids any possibility of such a contretemps. The use of pressed steel permits lighter pistons, as already set out, by the reduction of sectional areas, and the speed and efficiency of the engine is thereby improved."

Aiding Buyers in Choosing Colors.

Instead of attempting to depict by printer's ink the colors which purchasers of Locomobiles may nominate for their machines, the Locomobile Co. of America is issuing a supplement to its catalog in the form of a color sample card. This bears twelve strips finished with the actual colors as used on the cars, including four shades of red, four greens, two blues, a grey, and a striping yellow. In addition to giving the true colors, the card has a further value, according to the Locomobile Co. in that it "tends to limit the customer's ambitions to combinations which have been found to be in good taste and to colors that have been proved sensible, thoroughly practical and durable."

Making a Reliable Weld.

Generally speaking, the repair work which it becomes necessary to turn over to the country blacksmith is such as the average motorist can neither perform himself, nor superintend, except in the most superficial manner. It is well to bear in mind, however, that a weld is not certain to be reliable unless the lips of the "scarves" are well closed up, and the actual smooth and not crumbled from being overheated, and that a crack which is closed up with a few nimble blows of the hammer is not "healed" even though the smith may give every assurance that it is "good enough."

New Motor Starting Device.

A new foreign motor starting device comprises a crank mounted on the dashboard and a pedal which when depressed opens all the inlet valves and at the same time breaks the ignition circuit The release of conpression renders it very easy to turn over the motor, the cylinders thus being filled with gas at atmospheric pressure. When the pedal is released after cranking, the motor starts "on the spark."

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Tours Planned for the Public.

With the handsomest, strongest and most agreeable drivers that can be obtained, Frederick Ruther, of Hicksville, Long Island, plans to institute an automobile service that will permit residents and visitors in New York City to tour Long Island in motor cars. His scheme comprehends trips of one, two and three days, with all necessary hotel accommodations. Ruther has already had considerable experience in operating automobile routes from Hicksville to Huntington, Amityville, Mineola, Oyster Bay and other villages during the past season, and feels that he is sure of success in his larger enterprise.

The project as planned would be operated by the Interboro Motor Despatch Company, having Ruther as its president. The cars which he intends using are 65 horsepower vehicles of the sight-seeing order, carrying twenty passengers and capable of 35 miles an hour. These would leave from convenient points in New York and Brooklyn for tours through Long Island and possibly Connecticut and New Jersey, if the custom would warrant it. As laid out, a one day tour in Long Island would be as follows: Start from New York or Brooklyn at 9 a. m.; thence along the north shore through Flushing, Douglaston, Great Neck, Roslyn; thence to Mineola, Westbury, Hicksville, Coldspring Harbor, Huntington or Centreport, where a two hour stop for dinner would be made at one of the best hotels; thence across the Island to the South side and home, where the car would be scheduled to arrive at about 6 o'clock in the evening, after having covered about 100 miles. The charge for such a day's tour, including all expenses, is tentatively set at $5. By extending the route toward the eastern end of the island, tours of two and three days could be arranged, with good hotel accommodations. Ruther plans to use the Motor Parkway when it is completed, for part of his touring.

Not only does Ruther conceive this plan to acquaint people from New York with the beauties of Long Island scenery, but he also sees possibilities of conducting tours to New York for the patronage of the Long Islanders. The latter would not only thus see parts of the island that they were unfamiliar with, but upon reaching New York a "rubberneck" pilot would get aboard and give them the megaphone "spiel" on their trip through the city.

Line to Connect Tennessee Towns.

Feeling the need of suitable transportation between Jefferson City and Dandridge, Tenn., citizens of these cities have formed the Jefferson County Electric Motor Co., which will operate passenger automobiles between these and intervening towns. The company also will transport the mails and baggage. The officers are: President, Hal S. Harris; vice-president, W. R. Maynard; secretary, L. M. King; directors, S. T. Harris, Dr. F. P. Best, C. E. Harris, J. T. Holt, Mrs. Victoria Swan, Frank Miller, B. H. Mitchell, Arthur Swan, J. Frank Park, Jr., Dr. Tinsley, Walter Shepard and Ernest Logan.

Pardington Heads Contest Committee.

A. R. Pardington has been appointed chairman of the contest committee of the Long Island Automobile Club by President Charles Jerome Edwards, and his presence at the head of this important committee intimates that the members will not want for lack of interesting contests during the coming season. Mr. Pardington's associates will be C. G. Arnold and F. D. Bandell. The other various committees appointed, the first named member in each case being the chairman, are as follows: Membership, Dr. William P. Richardson, Frederick G. Jahn, Samuel Burns; finance and auditing, J. H. Emanuel, Jr., Dr. C. B. Parker, C. H. Galt; law and legislation, Dr. William P. Richardson, Charles C. Cluff, Frank G. Webb, Russell A. Field; house and entertainment, Edwin Melvin, Frank G. Webb, Russell A. Field; runs and tours, Leffert Lefferts, A. C. Alderman, Louis T. Hunt; technical, Louis T. Weiss, Dr. V. L. Hunter, H. W. Fairrax; good roads, Samuel H. Burns, Lew H. Allen, Cleveland Litchfield; garage, Dr. A. C. Howe, Alfred Wilmarth, C. A. Colson, Dr. F. M. Sharpe, W. T. Wintringham.

Watchman's Joy Ride was Costly.

The Crescent Automobile Co., Kansas City, made only one mistake when they hired Elmer Ashland to watch at the door of the garage at 921 Wyandotte avenue, to see that chauffeurs didn't go out joy riding at midnight when their employers were asleep. The Crescent company should have hired somebody to watch Ashland, and then it might not have happened that when John Barleycorn, sometimes traveling under the alias, Demon Rum came along and proposed to Ashland that they go out for a midnight spin together, the latter would have so readily accepted the invitation. Barleycorn was absent in court the next morning, when the story of his corupting influence was told, but Judge Kyle fined Ashland $25 for yielding to temptation.

Five Years Sentence for Automobile Thief.

Stealing automobiles is a pastime that doubtless will not become popular in Kansas. James T. Ambrose is a young man who, not possessing the necessary wherewithal, attempted to steal a car from the Kansas Auto & Supply Co., of Topeka. Sheriff Wilkerson was hot on his trail when he received advices that Ambrose had been arrested in Kansas City for a similar offense. Before the sheriff reached Kansas City, Ambrose had pleaded guilty in court to the Kansas City charge and had been sentenced to five years in the State penitentiary at Jefferson City. Justice was as rapid in its operation as Ambrose was in his thievery.

Prizes for Improvement of Roads.

The Milwaukee Automobile Club is going to get into the good roads movement strong during the coming year. At a meeting of the club last week, plans were laid for an active campaign and good results are expected. In the improvement of the country roads the co-operation of the farmers will be sought. A prize will be offered for the farmer who keeps the road adioining his property in the best condition. President L. C. Fuldner named the following committees: Membership, W. L. Hibbard, O. A. Hoffmann, George G. Huseby, Faustin Prinz and Robert G. Bates; legislature, James T. Drought, the Rev J. Szukalski, Julius E. Roehr, Phil A. Grau and George A. West; runs and tours, W. H. Pipkorn, C. W. Norris, George Prague, J. E. Farber, Thomas M. Drought; good roads, E. F. Wiedecken, R. G. Wagner, A. F. Sciliday, Frank F. Wilbur, H. H. Rice; racing, Emil Schandein. Lee A. Dearbolt, E. H. Schwartzburg, J. L. Potter, A. L. Brenkle; auditing, J. C. Baird, Phil A. Grau, Lee A. Dearbolt; technical, Clarke S. Drake, A. W. Shattuck, C. L. Haase, Jr., M. C. Moore and C. Scholtka.

Why the Assessor Piled on Taxation.

"Well, automobiles are both a luxury and a nuisance and I believe that they should be assessed at $1,000 anyway!" This is the statement accredited to Robert B. Harris, a tax assessor of Montclair, N. J., when Thomas W. Bardsley appeared before the County Tax Board last week, to register a protest against the assessed valuation of his car. Bardsley claimed that his car had been assessed at $800, which was twice as much as it was worth, explaining that he could prove by his bill that he had paid only $475 for it. It was after this explanation that Assessor Harris expressed his "sentiments."

Wilkes-Barre to Have a Bus Line.

According to advices from Wilkes-Barre, Pa., the New York Transportation Co., of New York City, will form a company in the Diamond City to maintain an automobile 'bus line. Four large passenger cars will be placed in operation at once, and if they prove a success, taximeter cabs also will give Wilkes-Barre metropolitan atmosphere.

To Carry Passengers or Saw Wood.

"A. B. Whitney, a well known mechanical genius has under construction a peculiar vehicle. It is a combination automobile and wood sawing machine. When completed it will be a wonder."—Lisbon correspondence Lewiston (Me.) Sun

Suspending the Scorchers' Licenses.

Aided by the Safe Roads Association which brought cases to its attention, the Massachusetts Highway Commission recently visited summary punishment upon a number of speed law violators. Licenses were taken away from three offenders..

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ALCOHOL A DREAM UNREALIZED

Why It Cannot Yet Compete with Gasolene as Fuel—Elements Contributing to the Cost of Production.

Quite in contrast with the roseate picture painted a year or so ago by the advocates of the then new "Free Alcohol" measure, the present status of the denatured alcohol situation is far from encouraging. Neither in its effect upon supply or demand has the removal of the impost on the denatured product come up to the importance which was predicted for it. The manufacturers who create a constant demand for alcohol in the processing of their output, have fallen into line and after a period of more or less heated conflict with the authorities, have settled upon formulas for denaturing which do not conflict with the demands of the operations in which the fluid is used. Apparently, however, no material increase in the demand for commercial alcohol has yet been brought about, and in that respect practically the only effect of the law has been to effect the substitution of denatured for the unaltered spirit formerly employed.

The tremendous demand for denatured alcohol to be used for industrial purposes apart from those in which its use was already extensive, has failed to materialize. The overwhelming inrush of alcohol motors which was predicted has altogether missed fire. As excusing this, two reasons have been assigned by those who have carried out experiments with the new fuel. In the first place, the thermal utility of the denatured product proved to be by no means as great as had been expected, at least when judged on the basis of present methods of use in the motor, so that the gain effected by using alcohol instead of gasolene is at present very slight, even when judged wholly apart from the question of its cost. In the second place, the expected reduction in the cost of alcohol not having developed, the verdict has been given by standard authorities that little if anything is to be gained by pushing the alcohol motor until such time as a marked increase in the rate of production and improvement in the processes incident to its manufacture shall have served to reduce its cost to the consumer. This being the case, the responsibility for the present rather discouraging state of affairs is being shifted about. The would-be consumer of a year ago blames the expected-to-be-producer, while the latter unloads the responsibility on the makers of distilling apparatus who, it is claimed, have failed to offer cheap and economical processes and machinery to the common or garden variety of producer.

The annual report of the Commissioner of Internal Revenue, just issued, reveals the surprising fact that since the passage of the bill, just ten stills have been set up for the purpose of manufacturing free alcohol, and further, that the cost of production has been far greater than was promised. Farmers have received from the Treasury Department pamphlets telling them how to manufacture spirits, but thus far the refuse turned into live stock has appeared to offer better returns than the production of denatured alcohol promises to give.

In press dispatches from Washington, Col. Newell Sanders of Chattanooga, Tenn., President of the National Association of Agricultural Implement and Vehicle Manufacturers, is quoted as saying that the people of this country will have to learn frugal methods before the law will benefit them.

"In order to manufacture the alcohol cheaply, all forms of vegetable and waste matter must be utilized," he remarks. "The manufacture of denatured alcohol is said to be successful in Germany, but in this country we have not learned such thrift as is practiced over there."

Manufacturers of appliances for the use of spirits, oils, and gas have taken little interest in industrial alcohol as a motive power. Very few appliances have been offered to the public for its use. At the recent Jamestown Exposition there were a few motors which used the alcohol, but little is thought to have been gained by the limited supply.

Internal Revenue Commissioner Capers ascribes the relatively greater cost of production, as compared with gasolene and kerosene, and the lack of proper appliances for its use as reasons for the slow growth of the propaganda.

"As understood by this office, various types of alcohol lamps, heaters, and motors are in successful use in Germany, and to encourage the manufacture and use of industrial alcohol the Government of Germany not only offers inducements to growers of potatoes from which the alcohol is manufactured, but imposes an impost duty on petroleum and petroleum products," says the Commissioner.

"Under this system, there are about 70,000 farm distilleries in Germany producing industrial alcohol, which is sold to consumers for about 27 cents a gallon. In this country the average price of denatured alcohol in barrel lots has been about 36 cents per gallon.

"While these distilleries are now permitted to use any material whatever in the production of industrial alcohol, the alcohol so far manufactured has been produced mainly from corn, and until a cheaper material is found and its practical use demonstrated it may be doubted whether this class of alcohol can successfully compete with gasolene or kerosene in this country."

"The A B C of Electricity."

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

BUYER ALLEGED HE WAS SOLD

Payment for Second Hand Automobile Resisted—"Horse Trade" Tactics Charged in Defense Against Suit.

That the automobile is superseding the horse, even to the extent of breaking into court and stealing its laurels there, was emphasized in the Supreme Court Circuit in Newark, N. J., last Thursday at the trial of a suit brought by Byron S. Klotz against William D. Slater. Klotz sued to recover $500 on a note given by Salter, May 25, 1905, and it was in explanation of this transaction that Salter based his defense.

The note transaction was admitted at the outset of the case and the plaintiff was not obliged to put in any evidence as to it, further than that the note had originally been given to J. B. Thompson and indorsed by him to Klotz, who had tried to collect on it and failed. Salter bought an automobile from Thompson. The car was represented to him, he said, as being worth $8,000, but he expressed no astonishment when told he could buy it for $2,500. He did so, paying $2,000 in cash and giving Thompson the note for the balance.

It did not take Salter long to find out, he declared, that the note had been secured from him by "fraudulent representations and so his lawyer outlined in opening the defense to the jury. It was testified that the machine "worked well for a time," but was soon found "not to be worth $1,000," "was in bad order," "out of repair," "its sprockets were broken," "its carburetter wouldn't work," and other complaints of a like nature.

Most of the court's time was taken up by automobile experts, who passed judgment on the worth of certain parts of the machine, which were offered in evidence Broken sprocket wheels were exhibited, and one witness went into a long explanation of the amount of wear these would sustain in being used on a car that traveled a thousand miles. The same was done as to the wheels of the vehicle, and further testimony was given as to the relative value of different automobiles.

Malcolm MacLear, who represented the plaintiff, objected to much of this line of evidence on the ground that it had nothing to do with the claim that Mr. Klotz possessed an unpaid note of Salter's for $500.

Among the wood products of western Australia one known as "yate" has been shown by recent official tests to have extraordinary tensile strength. The average was 24,000 pounds to the square inch, and one specimen was tested up to 17½ tons to the square inch, which is equal to the tensile strength of wrought iron. The yate tree grows to a maximum height of 100 feet and a diameter of 2½ or even 3 feet.

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NEW TAGS IN MASSACHUSETTS

Radical Change in Design Adopted to Make New Registration Effective—Old Licenses Expire January First.

New registration and new number plates will be in order for automobilists in Massachusetts on and after the first of January. On that day the provision of the new registration law becomes effective, the law stating that "the registration of every automobile or motorcycle shall expire upon the first day of January in each year."

To prevent the operation of motor vehicles illegally, the Highway Commission has adopted an entirely new number plate. The present plate has white figures on a blue background. In the new plate this arrangement is reversed, the figures being blue and the background white. The new plate also bears the numerals "1908" and the letters "Mass." The new plates will be easily distinguishable from the old even at a distance, and it is thought by some that they will be more easily read. The new certificates will be practically the same as the present except that they will have the numerals "1908" conspicuously displayed.

Heretofore the Commission has permitted the renewal of old numbers, but it will be unable to do this except to a limited extent when the new registration begins. There have been issued about twice as many sets of plates as there are automobiles in the State. Concerning this matter the Commission has issued a statement in which it says:

"A new style of register number-plates has been adopted by the Commission for use in 1908, and a new series of register numbers, beginning with No. 1, is to be issued. A person to whom a register number below the number 5,000 was originally issued will be reassigned his former number for his use in 1908, provided he makes a specific request for the reassignment of such number, and provided also that his 1908 application is received on or before January 15. This arrangement will apply only to numbers below 5,000."

After the fifteenth of January, if all the numbers below 5,000 are not taken up by the original holders, the numbers remaining will be assigned to other applicants. It is believed that many of the lower registrations have lapsed and this will give those who wish an opportunity to secure low numbers for their car next year. After the old numbers below 5,000 have been reassigned or taken up by others the Commission will begin the issue of numbers from 5,000 up. An order has been placed for 14,000 sets of plates and it is believed that these will be sufficient for the demands which will be made by present owners of machines.

It is stated as examples of the attachment of owners to their old numbers that when the registration law first became effective there was much competition for the number "13"; one Massachusetts man has retained possession of the number "1" for years; and there is another who owns a number of cars and insists on having certain combinations of numbers on all his cars. It is said that he has a telephone number with the same combination. The scheme aids remembering his numbers.

For dealers the number plates are supposed to have a distinct advertising value. The owner of 01 is the Harry Fosdick Company; the Columbia Vehicle Co. has 02, the General Electric Co. 03, the Locomobile Co. 04, the Pope representatives 05, and so on. The concerns that have the low numbers will be able to keep them next year if they apply in time, though some of the dealers who have entered the business recently and who have high numbers probably will be obliged to make a change. The new plates will be similar to those of private owners except that preceeding the number will be a cipher, while following it will be a letter, as "07A," which marks car A of the White Company, or "07B," which means car B of the same company. Dealers need not carry these letters with the numbers which are placed upon the lamps of these machines, the Highway Commission having decided that the number alone is sufficient.

Palatial Club House Planned.

When the Royal Automobile Club takes possession of the new club house which it plans to build in London it will have the finest club house in Europe. It will occupy the site of the old war office on Pall Mall, a lease of which has been secured from the Crown. There is a frontage of 228 feet on Pall Mall and a depth of 145 feet. The club house will occupy the entire frontage and extend back 120 feet, leaving a space 25 feet deep for a garden.

Under the elase the club is bound to erect a building to cost not less than $500,000. It is stipulated that the material shall be Portland stone. The plans contemplate a thoroughly up to date establishment with gymnasium, swimming and Turkish baths, and a dining room to seat not fewer than 200 or 250 persons. If possible bed rooms to the number of 150 will be provided for the use of members.

Schenectady Retains Old Officers.

Although small numerically the Schenectady (N. Y.) Automobile Club will start its first fiscal year with the consciousness of having done good service in placing signboards at crossings, furthering good roads work and promoting club tours. At its annual meeting last week, the treasurer's report denoted a balance of $142.60. The incumbent officers were re-elected and H. S. DeForest, H. Earl Furman, Edward F. Peck, George H. Close, and F. R. Champion named a committee on good roads.

BUFFALO CLAIMS BIGGEST CLUB

And Deposits a Nest Egg for a Building Fund—Frank B. Hower Elected President for Ensuing Year.

Naturally, members of the Automobile Club of Buffalo, N. Y., swelled with pardonable pride at the annual election of that organization last week. They had reason for doing so as the club is now the largest in the country, and the largest vote in the history of the club was cast for the single slate of officers reported by the committee on nominations.

President Seymour P. White reviewed the accomplishments of the year before he relinquished the chair to the president elect, Frank B. Hower, chairman of the touring board of the American Automobile Association, and the treasurer's report showed that the receipts of the club last year were $9,027, and disbursements, $5,670, leaving a balance of $3,357, of which $2,500 has been laid aside as the nucleus of the country club house fund. Among the other speakers were President Hotchkiss of the American Automobile Association, and Edward Butler, who has served five years on the board of governors, and was re-elected in the same capacity.

The officers for the ensuing year are: President, Frank B. Hower; vice-president, John M. Satterfield; treasurer, Laurens Enos; secretary, Dai H. Lewis; directors, E. R. Thomas, Edward H. Butler, Charles Clifton, James N. Byers and George C. Diehl.

Chicago Club Officers Re-elected.

The Chicago Motor Club, at its annual meeting last week, re-elected all its old officers, as follows: President, F. C. Donald; first vice-president, Walter Githens; second vice-president, Edward Rowan; secretary, George Greenberg; sergeant-at-arms, O. E. Temme; assistant sergeant-at-arms, J. C. Zimmerman; directors, C. R. Root, J. V. Lawrence, David Beecroft, H. P. Branstetter and Carl J. Metzger.

Wachusett Club Officers for 1908.

At the annual meeting of the Wachusett Automobile Club, held in Fitchburg, Mass., last week, the following officers were elected for the ensuing year: President, Charles B. Smith, Fitchburg; vice-president, Arthur H. Hall, Leominster; secretary, General Greenwood, Gardner; treasurer, Geo. P. Grant, Jr., Fitchburg.

Hillenbrand Heads Cincinnati Club.

The Cincinnati (Ohio) Automobile Company has elected the following officers: President, Ray J. Hillenbrand; vice-president and general manager, H. O. Brunton; treasurer, A. J. Hillenbrand; secretary, H. W. Hillenbrand.

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The Week's Patents.

865,964. Rotary Engine. Warren F. Bleecker, Victor, Colo., assignor of one-third to Frederick G. Bleecker, Grand Island, Neb., and one-third to Martin C. Bleecker, Pueblo, Col. Filed March 17, 1906. Serial No. 306,568.

A rotary engine comprising a motive casing, an abutment therein, a tubular shaft extended into the casing and having a port, a radial wing at one side of said port, a tube extended into the hollow shaft, and having a port, a ported tube having rotative movement on the first-named tube, a rod, an arm on said rod, a link connection between said arm and the rotary tube, a governor for causing movements of said rod, and a driving connection between the governor and the shaft.

865,967. Rotary Engine. John E. Hartiman, Jr., Brookline, Mass. Filed Feb. 12, 1906. Serial No. 300,552.

1. A rotary engine or motor comprising a rotary member forming the inner walls of a working chamber, a shaft affixed to and driven by said member, a fixed inclosing structure which completes said chamber and has inlet and outlet ports therefor, automatic means for opening and closing the said inlet port to intermittently admit a working agent to the said chamber, and means carried by the rotary member and the inclosing structure, to co-act with the working agent in imparting movement to the rotary member, and controlled by the working agent so as to be put thereby into pressure resisting relation.

866,001. Sparking Mechanism for Internal Combustion Engines. Leslie S. Cushman, Lincoln, Neb. Filed June 3, 1907. Serial No. 377,102.

In apparatus of the class described, a box or casing, contact plates arranged therein, one adapted to be connected to the terminal of a sparking circuit, and the others to the terminals of the sparking plugs, a shaft mounted in the casing, a rocker arm carried by the shaft, a contact plate carried by the arm and insulated from the shaft, said contact plate being constantly in engagement with the terminal of the sparking circuit, and mechanism for rocking the shaft to move the plate alternately into engagement with the contact plates of the plugs.

866,009. Tire. William I. Dreisbach, Williamsport, Pa. Filed Sept. 15, 1906. Serial No. 334,758.

1. In a tire, the combination with an outer casing, of a puncture resisting cushion located inside the same and comprising a strip wound longitudinally upon itself into a plurality of convolutions, one overlying the other, said strip consisting of sections disposed end to end, the end of one section being secured to the end of the next.

866,133. Vehicle Steering Gear. John A. Herzog, Toledo, Ohio, assignor to The De Luxe Motor Car Co., Detroit, Mich. Filed June 15, 1907. Serial No 379,121.

1. A steering gear comprising a pair of casing halves united by a vertical joint and

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having post bearings in its upper and lower walls and a slot in the joint between its halves, trunnion bearings carried by the casing halves at the opposite sides of said slot, a steering post journaled in the post bearings, a worm on the steering post within the casing, a worm gear sector engaging the worm and having a hub engaging the sides of the casing slot and having its upper and lower concentric portions engaging the upper and lower margins of the slot, trunnions projecting from said hub into engagement with the trunnions bearings, and a steering arm projecting from the hub exterior to the casing, combined substantially as set forth.

866,134. Tire Protector. William H. Hoffmann, New York, N. Y. Filed Nov. 18, 1905. Serial No. 287,981.

1. A tire protector, composed of a series of shoe sections substantially V shaped in cross section which shoe sections are provided in each side edge with a notch at the center of the shoe and extending inward from the side edge, a pivot pin extending through each notch near its outer end and links mounted slidably on the pivot pins of two adjacent sections and extending in the direction of the length of the tire protector formed of such alternate link and shoe sections, substantially as set forth.

866,164. Transmission Gearing. George J. Sogge, Hanson, S. D. Filed May 31, 1906. Serial No. 319,542.

1. In a transmission gearing the combination of a shaft, a case rigid with the shaft, a series of gear wheels loosely mounted upon the case, a driven member having an operative connection with one of the gear wheels, a brake drum having an operative connection with one of the gear wheels, a second brake drum having an operative connection with one of the gear wheels, means for moving one of the brake drums into engagement with the opposite brake drum whereby the two are locked together, and means for locking the brake drums in a fixed position.

866,186. Variable Speed Friction Mechanism. Alanson P. Brush, Detroit, Mich. Filed Oct. 20, 1906. Serial No. 339,883.

1. A friction speed mechanism to obtain varying speed ratios comprising a friction disc made thicker toward its center than at its periphery, friction rings contacting upon opposite sides of the friction disc, and means to bring the centers of rotation of the friction rings and the friction disc into and out of alignment.

866,192. Spring Wheel. Leopold J. Castiau, Strathcona, Alberta, Canada, assignor of one-tenth to Charles F. Hover, Conrad, Mont. Filed Nov. 12, 1906. Serial No. 343,051.

1. In a wheel, the combination of a spoke comprising adjustable sections, an adjustable cylinder slidably mounted upon one of said adjustable sections, and yielding means between a member of said adjustable cylinder and a member of the adjustable sections.

866,202. Transmission Gearing. Enos M. Hostetter, New Providence, Pa. Filed May 24, 1907. Serial No. 375,460.

1. The combination of a plate having an opening formed therein, a shaft carried by the plate and extending through the opening, a pair of pinions mounted upon the shaft and rigid with each other, a gear wheel mounted upon one side of the plate and meshing with one of the pistons, and a second wheel mounted upon the opposite side of the plate and carrying a toothed flange meshing with the opposite pinion.

866,297. Pneumatic Tire. George Noyes, Mandan, N. D. Filed Dec. 4, 1905. Serial No. 290,253.

In combination with a pneumatic tire comprising an inner and outer tube, a shield having opposite ends inserted between the tubes and composed of a strip of flexible elastic material crescent shaped in cross section and a strip of metal which is flat in cross section embedded in the flexible material, the arrangement and contour of the parts being such that gripping angles of contact between the inner tube and the edges of the shield will be formed in the said tube when inflated whereby the shield is retained against lateral movement between the tubes, said shield having its ends oppositely inclined and overlapping each other.

866,328. Brake Mechanism. Alanson P. Brush, Detroit, Mich. Filed Aug. 31, 1906. Serial No. 332,781.

1. A brake mechanism comprising a rotatable brake drum, an unattached friction band within the drum having both extremities formed with wedge shaped faces, a fixed stop between the ends of the band, and means to be forced between the ends of the band to force the band against the drum, whereby the brake will be set in either direction.

866,367. Vehicle Wheel. Curt von Kusserow, Lubbecke, Germany. Filed Jan. 26, 1906. Serial No. 298,035.

1. In a wheel, the combination of a hub and felly, of radially movable spokes interposed therebetween, and means for forcing the ends of said spokes into frictional association with said felly and said spokes being unlimitedly displaceable circumferentially of the felly, and means opposing said displacement by a resistance varying with the amount of said displacement, substantially as described.

866,397. Speed and Distance Indicating and Recording Device. Richard H. Smith, Springfield, Mass., Filed Dec. 14, 1906. Serial No. 347,833.

1. The combination with a drum and means for confining a record sheet in supporting engagement upon and around it, and a clockworks having a rotation imparting connection with the drum, of a speed indicating device comprising an indicator casing having a slotted front, a centrifugal governor comprising a vertical stem, having its upper portion between the slotted front and drum, endwise movable in degree proportionate to the speeding of the governor, a vertically apertured head, rotatively loose, but endwise immovable, relatively to the upper extremity of said stem, provided with a transverse stud, projecting through the slot of the indicator casing, said stud having a pointer movable on the face of the scale card, and said head also carrying at its side opposite said stud a return bent spring arm provided with a marker for operating against the drum carried record sheet simultaneously with the coaction of the pointer with the scale card.

866,410. Driving Mechanism for Automobiles. George R. Walker, Chicago, Ill. Filed Oct. 1, 1906. Serial No. 337,005.

1. In a driving mechanism, the combination of a traction wheel provided interiorly with a gear rigidly mounted thereon concentric with its axis of rotation, a drive shaft journaled in alignment with the axis of the traction wheel, extending within the wheel and carrying a pinion, a yoke constituting an axle-support upon which said traction wheel is journaled, provided within said wheel with radial extensions and a plurality of intermediate gears interposed between said pinion and the internal gear and meshing with both.

866,765. Clutch. Severin C. Anker-Holth, Riverside, Ill. Filed Sept. 4, 1906. Serial No. 333,188.

1. A clutch having a pair of relatively rotatable main clutch members, friction shoes movable into and out of securing frictional engagement with one of such main clutch members, and a plurality of levers each in engagement with a plurality of such friction shoes and with the other main clutch member.

866,776. Reversing Mechanism. Albert P. Creel, Ionia, Mich. Filed June 5, 1907. Serial No. 377,459.

1. In a reversing mechanism, a base plate having boxes thereon, a driving shaft and gear revolubly secured thereto, a shaft mounted to revolve in the boxes at right angles with the driving shaft, two gear wheels revolubly mounted on the second shaft between the boxes and engaging the driving gear at diametrically opposite points, a clutch mounted on said shaft between the gear wheels and arranged to engage each alternately, a spline in the shaft to revolve the clutch with the shaft, said shaft having a screw thread at one end, a nut actuated by said screw thread, a sliding plate, a latch, a trip, and springs arranged to actuate the clutch longitudinally of the shaft.

866,874. Tire. Joseph E. MacKay, Los Angeles, Cal. Filed Jan. 23, 1907. Serial No. 353,745

1. A tire comprising a circular woven wire element, a series of elastic blocks engaging in the meshes of the woven wire element, and a tread encircling the blocks.

866,908. Driving Gear for Motor Vehicles. Charles R. Binney and James L. Watkins, London, England. Filed March 21, 1907. Serial No. 363,981.

In combination, a frame, a driven shaft carried thereby, an eccentric mounted on said shaft, a disc rotatably carried by the frame, said disc having a cam groove in one of its faces, a rod on the eccentric, an arm pivoted to the rod and to the frame, a roller carried by the arm to one side thereof intermediate its pivots to engage the cam, and additional means for rotating the driving shaft acting in conjunction with the opposite face of the disc.

866,926. Hydraulic Clutch. Arthur J. Fippard, London, England. Filed March 18, 1907. Serial No. 363,043.

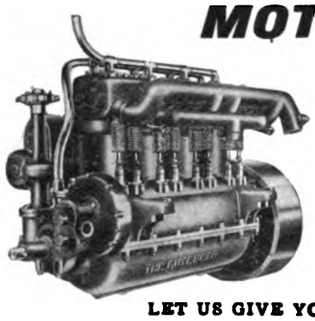
1. A hydraulic clutch comprising driver and follower members, an annular recess in one of said members, blocks fitting said recess and connected to the other member, means for causing relative motion of said blocks within said recess, and means for causing a variable resistance to said relative motion.

866,927. Tire. Robert A. Gehan, Buffalo, N. Y. Filed Dec. 18, 1905. Serial No. 292,146.

1. In a wheel, the combination of a continuously coiled spring of substantially the same diameter throughout its length, a felly entirely surrounded and enclosed by said spring, spokes secured to said felly, and means for clamping the coils of said spring against the inner periphery of said felly to hold said spring in position and prevent endwise movement thereon, substantially as described.

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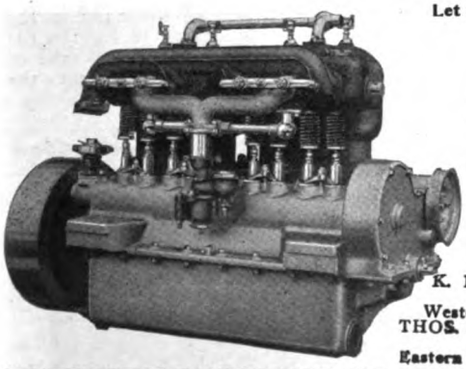
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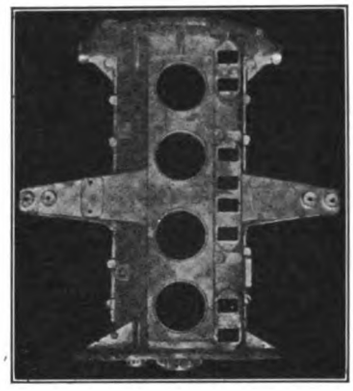
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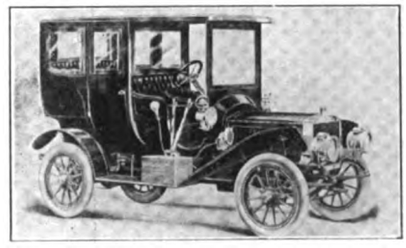
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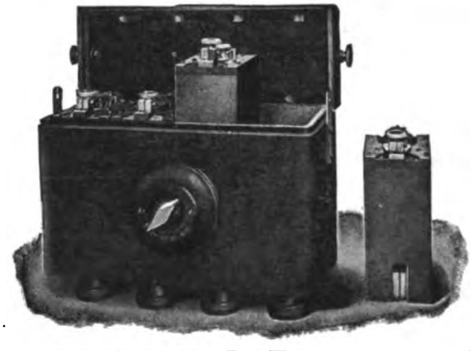


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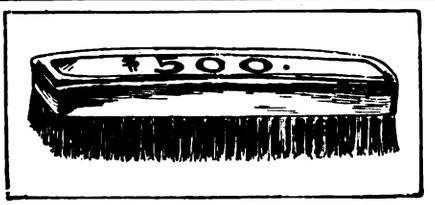
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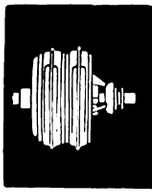
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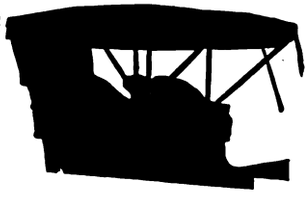
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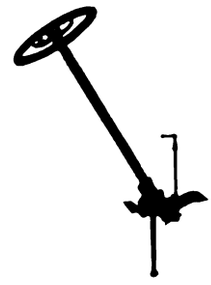
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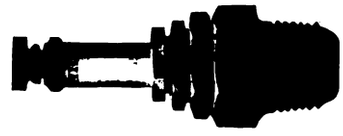
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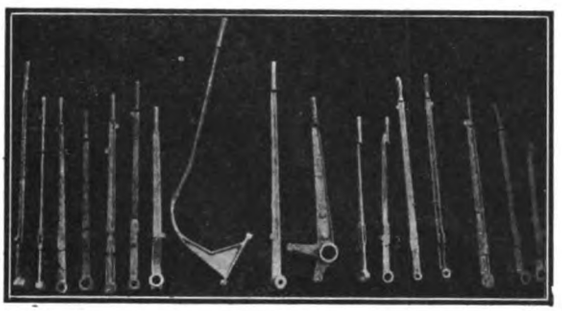
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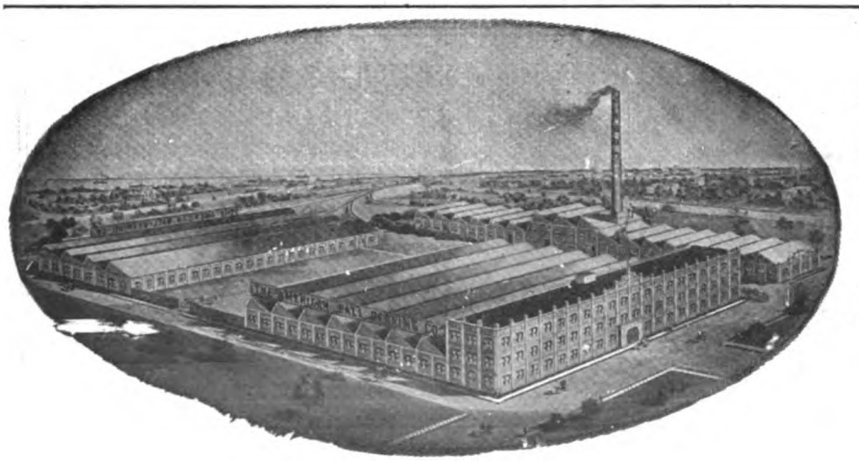
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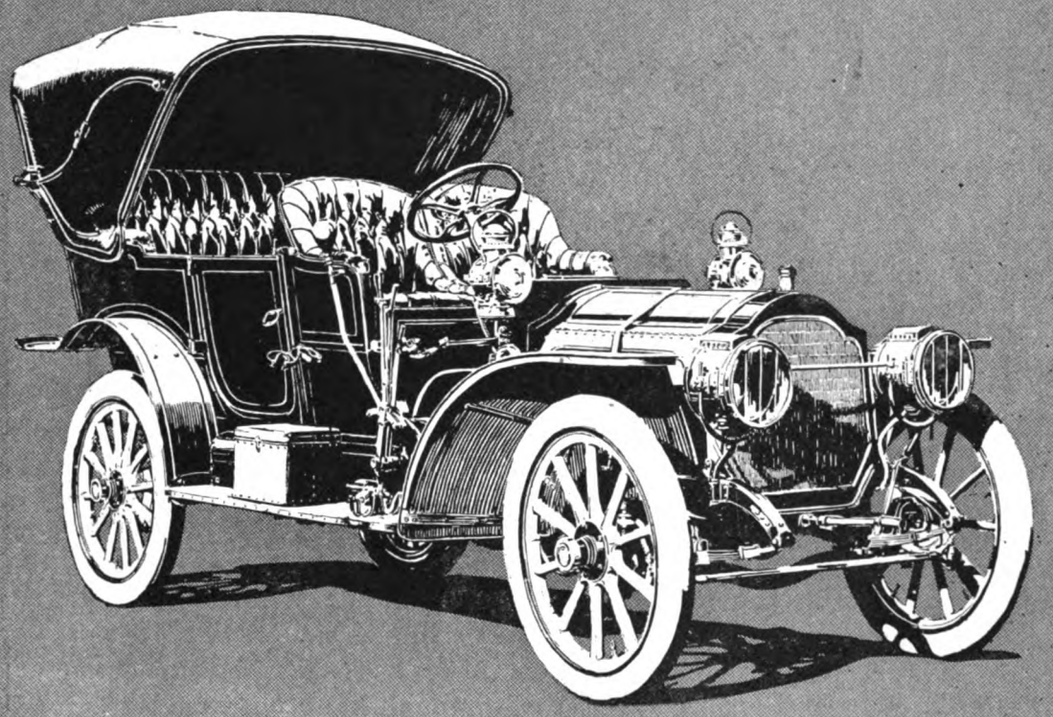
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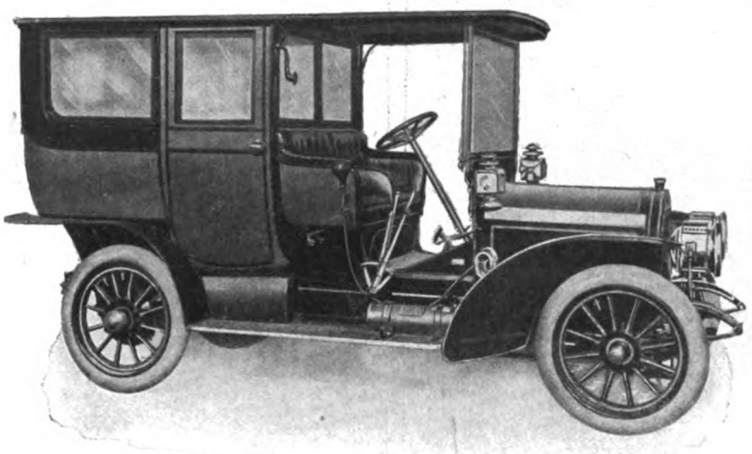


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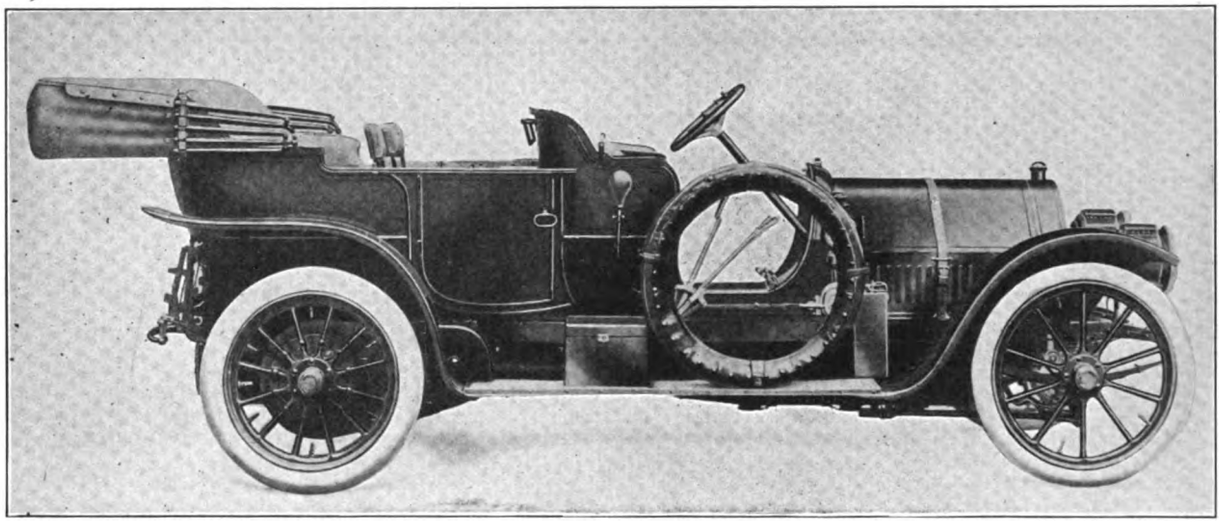
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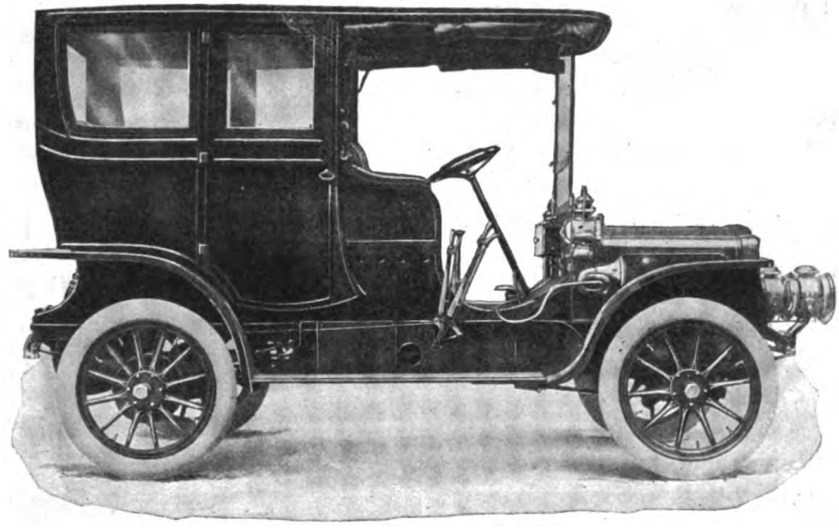
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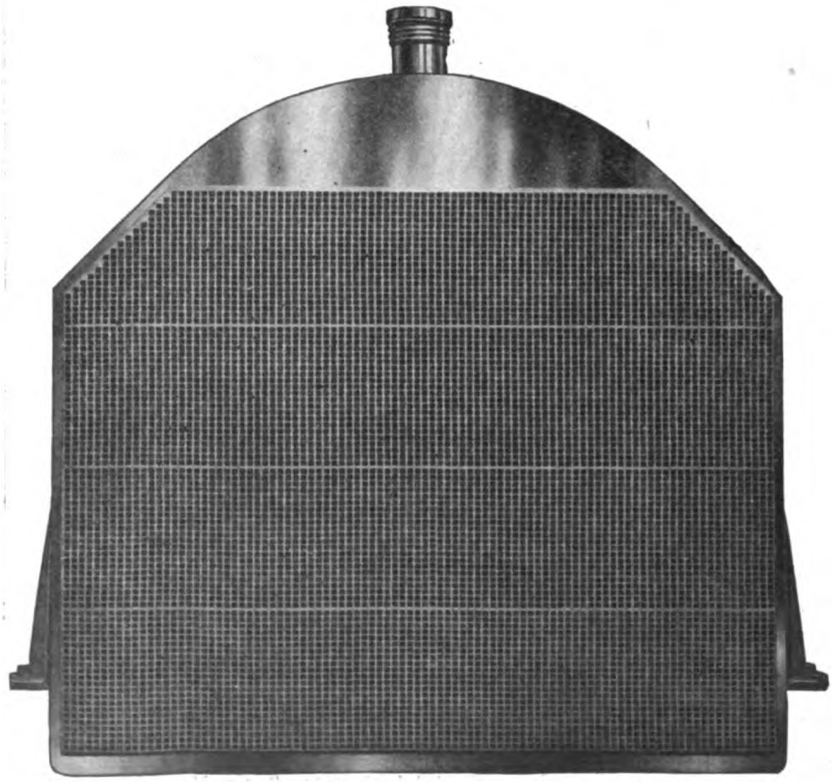
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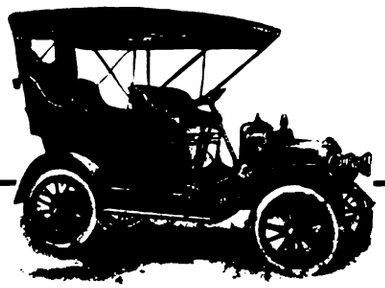
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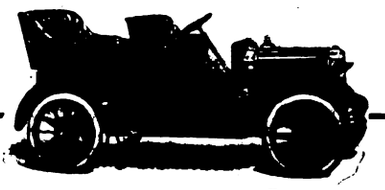
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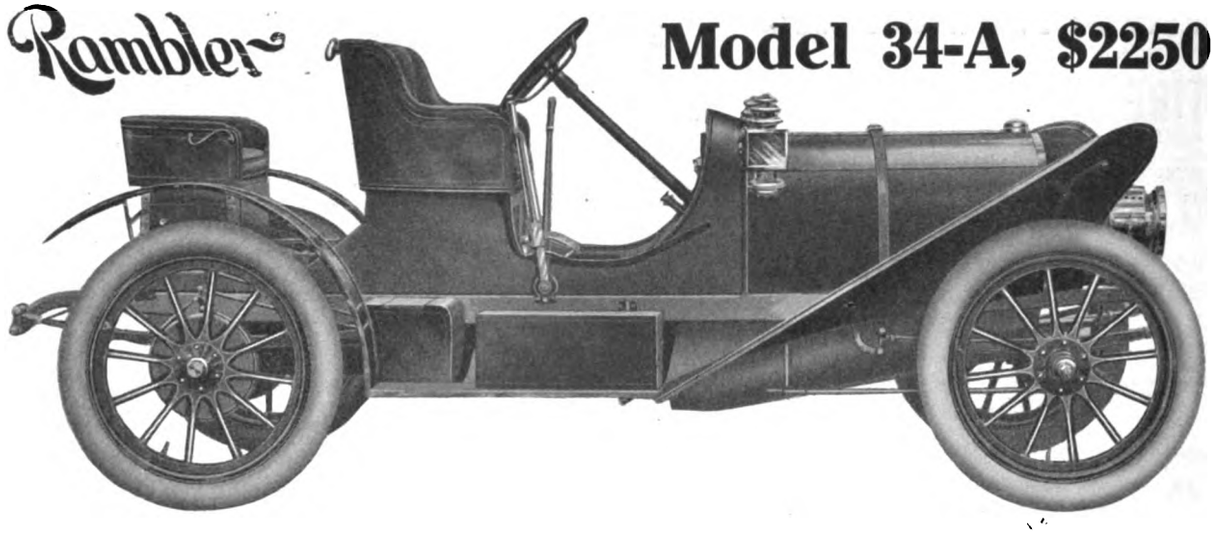


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Volume XVII. New York, U. S. A., Thursday, January 2, 1908. No. 14.

SHOW MAY BLOOM IN THE SPRING

Metropolitan Automobile Dealers Didn't Know They Were to Hold One—But Details Have Been Arranged.

The "Metropolitan Automobile Dealers" will, or rather may, hold their "first annual spring show" in New York during the week April 6-11, 1908.

Apparently the dealers themselves are not aware of the fact, but a trifling circumstance of the sort is of small importance. For not only have the dates been fixed but the hall—the Metropolitan skating rink at Broadway and Firty-third street—appar- has been engaged, 23 spaces have been plotted and of course the price therefor has been fixed—only $250 for the large spaces, $200 for the smaller ones. Rules also have been adopted, that is, printed.

The "show prospectus," giving the foregoing details, made its appearance this week as quietly as a summer's sigh. It was the first that many of the metropolitan automobile dealers knew of the show in which they are supposed to be interested. According to the prospectus, C. Wood Tatham is general manager of the project, and Duncan Curry, the treasurer. Tatham was the manager of the show and "auto carnival" held in Atlantic City last summer, but who for some reason or other was displaced at almost the eleventh hour. He came to New York and mixed with the large colony of genial and enterprising spirits who have their nests in the Spalding building on West Forty-second street, in which so many "good things" have been hatched; he became so touchingly acquainted that some of them are not now so cordial in their expressions of regard as once was the case. Duncan Curry is automobile editor of Hearst's American and his "doubling up" with Tatham has caused some little surprise and comment.

That the promoters of the "first annual spring show" were somewhat in doubt as to the dates for the affair is made evident by their prospectus, which was printed in blank and the dates filled in afterward in ink.

When inquiry was made of Alfred Reeves, general manager of the American Motor Car Manufacturers Association, he stated that he had heard whisperings that a "show" of the sort was in contemplation, but he was not aware that dates had been fixed or that a prospectus was in existence. His remarks conveyed the impression that he did not accept the project with too much seriousness.

E. V. Stratton, manager of the New York Automobile Trade Association—the local dealers' organization—knew nothing whatever of the enterprise and naturally his association had not taken cognizance of it, nor did he think it would do so. For some time the association has had under consideration the holding of a "sales week" or "open house" early in the spring and Stratton did not think anything would be permitted to interfere with the carrying out of that idea.

Shelby Shifts Sales Department.

Henceforth the Shelby Steel Tube Co., as such, will to all practical purposes, cut little or no figure in the business, the Shelby sales repartment having been taken over by the National Tube Co., of which Clifton Wharton is the sales manager. The change, however, will be more apparent than real as the Shelby Steel Tube Co. is merely one of the units of the National Tube Co., and save in respect to the sales departments, the line of demarcation between them has been rather vague. Hereafter the business will be dircted from New York, where Mr. Wharton is located, instead of from Pittsburg as heretofore.

Hutton with the Thomas Detroit.

W. H. H. Hutton, who for five years was purchasing agent of the Northern Motor Car Co., and who more recently managed their Port Huron factory, has engaged with the E. R. Thomas Detroit Co. He will be attached to the purchasing department.

BRITONS SCARED BY A BUGABOO

An Alleged American "Melon" Operates as a Bomb—Professions of Patriotism Punctured by the Explosion.

Great Britain is reveling in a trade sensation with what might be termed an American underpinning. While the underpinning appears to be rather weak it has given Britain's native sons in the automobile trade a grand opportunity to proclaim their love for the British public and the British workman, though their proposals for giving practical effect to their altruism differ so widely that a glorious row has been precipitated. It all comes about through the hair-trigger patriotism of that Harriman of the British motor trade, Harvey Du Cros, who stands as a repeller of the hated American products and who has made a denunciation of the importers who invited him to participate in a melon cutting based on the "American panic."

The first explosion was set off when Du Cros made public a letter written him by Shippey Brothers, a London wholesale importing firm making a specialty of American goods, and with it his grandiloquent reply. The Shippey letter recited that "many American motor car companies are on their beam ends through the financial crisis now raging in the United States," and that the "Official Liquidator" of the Pope Manufacturing Co. was prepared to sell "thousands and thousands of stock on hand at panic price." Not only had the Shippeys bought a number of cars at exceedingly low figures, the letter went on, but they had arranged for options on $200,000 worth more which could be imported in time for the spring season if Du Cros wanted to help finance the scheme, The cars could be sold for 50 per cent. under the list, they said, and there was a "pot of money to be made." In conclusion, Shippey Brothers desired that Du Cros understand "that this proposal is

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made to you privately, knowing your power in the motor world; it may, therefore, answer your purpose to control it or crab it as you may desire."

Du Cros responded in the most lofty vein that while the offer was made to him privately, he declined "to be privy to any such transaction" and that he intended to give warning to the public and the British industry. His full reply was sent to the trade papers and dailies together with a copy of the original Shippey letter. After telling of his former alleged refusal to assist in a dumping of American bicycles in the English market, Du Cros, who declares he "has spent some of the best years of his life in developing the automobile industry," expresses his declination of the offer and hopes that "no Englishman will be found willing for the consideration of a 'pot of money' to join in such an attempt" as Shippey Brothers proposed "to dump American automobiles at ruinous prices to the detriment of the nascent English automobile trade."

Rounds of epistolary and editorial applause greeted Du Cros as a result of his letter thus spurning the horrid American offer in the manner of the Billy Baxter heroine who declares that "rags are royal raiment when worn for virtue's sake!" Here was one who set the welfare of the British industry above the opportunity for personal profit.

But Shippey Brothers were not to be thrust into the role of villains in the melodrama. When their "private" offer was made public with the scathing refusal, they affected to see in the latter less altruism than a desire on the part of Du Cros to discourage competition against his own enterprises of importing cars from Italy, France, Germany and Belgium into the English market. Further they were bursting with altruism themselves. This they set forth in a long letter explaining how their proposed importation of "panic" cars from America would benefit the English workman and the public. Their object in undertaking the enterprise, according to their letter, was as follows:

"(a) The employment of English chauffeurs to run these cars on our behalf;

'(b) To give English engineers repair work on all cars imported, as we have always done on the large number of American cars sold by us in this country;

"(c) To utilize British capital to profitable advantage in a safe paying business for all concerned;

"(d) And above all to check the flow of many systems of Continental cars to work which importers also import Continental labor to drive and repair them."

Manifestly whatever difference arose between Du Cros and themselves was due, apparently, to a competitive eagerness to be of benefit to the British trade. With the English propensity to ease themselves by the inditing of communications, everybody has taken a hand at spattering ink in the discussion and the thing has run riot to a point where at last it has occurred to a few of the cooler heads to inquire whether there is any real basis for the turmoil and how far Shippey Brothers' tensely drawn representations of American conditions match the facts.

Going right to the heart of the matter, a letter signed by Percival D. Perry analyzes the Shippey proposition in part as follows:

"The new proposal emanates from a firm whose projections I venture to think should not be taken too seriously, and in confirmation of this view, I desire to query certain statements contained in a letter addressed to Harvey Du Cros, Esq., dated the 4th December and signed by Shippey Brothers.

"Therein it is stated, 'The —— company has failed for over four million sterling, and have thousands upon thousands of stock upon hand, which in the panic the Official Liquidator is prepared to sell at panic price.' Presumably the —— company is the Pope Manufacturing Co.; if this be so, then the figures stated in the said letter are quite inaccurate. Indeed, the above quoted paragraph is so loosely strung together that we are not told whether the thousands upon thousands of 'stock on hand' means thousands upon thousands of automobiles, or thousands upon thousands of dollars worth of automobiles, or thousands upon thousands of pounds sterling worth of automobiles.

"That there is a panic in the automobile business in America, I, having very carefully investigated the position, emphatically deny, but even if it were so, I fail to understand upon what authority Shippey Brothers can state 'the Official Liquidator is prepared to sell at panic price.'

"Can Shippey Brothers give the name of any company which is even in the hands of an 'Official Liquidator'?

"I think it would only be fair to the automobile industry if modesty or fear of advertising American automobiles had not compelled the numerous blanks throughout the letter of Shippey Brothers. Obviously, it is difficult to check and repudiate statements which are not precisely defined. I, however, have every reason to suspect the accuracy of the statement by Shippey Brothers that 'Our New York offices have purchased over £20,000 worth of cars, including fifty 35-40 horsepower touring cars . . . . . which we can sell at the price of £350.' Inasmuch as later, in the same letter, it is stated that cars listed at £675 to £700, that is $3,375 to $3,500, will be sold at 40 per cent. to 50 per cent. under value, i. e., £350 to £420, and the British sellers make a 'pot of money.'

"Now the production of American automobiles listed at $3,500 is strictly limited, and competition in the industry does not allow 50 per cent. profits, therefore the said cars, having to be sold at at least 60 per cent. off list, in order to provide the said 'pot of money,' could not be procured from bankrupt concerns.

"It is positively certain that there is, at the present moment, no bankrupt automobile concern in the U. S. A. which has on hand any number of finished cars such as Shippey Brothers threaten to dump into England.

"Most probably the communication of Shippey Brothers has obtained a good deal more publicity than was ever anticipated; however it is positively certain that there is no more danger of dumping by American automobile manufacturers than there is of dumping by French, German or other Continental automobile manufacturers."

If Shippey Brothers maintain an American office it is difficult to locate. None of the better known New York exporting firms are able to supply its address and extended inquiry has failed to reveal it. But their London letter indicates that they handle a number of well known American wares and the Motor World is in receipt of an invitation from them to "boom our ideas as much as you like," accompanied by a suggestion of "a slashing preliminary article." Like their letter to Mr. Du Cros, this communication is labeled "Private."

About thirty Pope-Toledos constituted the foundation for all the furore and flourish of trumpets. According to Albert L. Pope, of the Pope Mfg. Co., that number of those cars of the vintage of 1906 were on hand in November last, and to clear them, a special export price was set under option, which never was exercised. Since then, however, they nearly all have been disposed of on this side so that the quotations then given, having their possible English sale in view, have been cancelled. The officers of the company do not know of any arrangement for the export of Pope cars at "panic" prices, or anything suggestive of panic prices and are disposed to smile at the scare which the Shippeys threw into Mr. Du Cros and the British trade generally.

The Factory that Gauntt Bought.

The South Bend (Ind.) factory which N. C. Gauntt is to remove to Spokane, Wash., in the spring, proves to be the Perfection Automobile Co., which was first heard of at the Chicago show last month, where it exhibited one car. Gauntt, who is a Washingtonian, is authority for the statement that the Perfection plant employs 40 men and will need 100 when it locates in Spokane. Gauntt himself has designed a car with a convertible body that can be converted into a sleeping room, kitchen, etc., and for which he foresees a great future. He will style it the Flying Dutchman and expects to make 20 cars per month.

Thomas Adopts the Truffault-Hartford.

The E. R. Thomas Motor Co. finally have adopted the Truffault-Hartford shock absorber. It will be supplied as part of the regular equipment of all Thomas Flyers and six-cylinder cars.

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The Week's Incorporations.

Boston, Mass.—Boston Taxicab Co., under Massachusetts laws, with $1,000 capital. Corporators—Warren N. Akers, Norman J. Mac Gaffin, Lawrence B. Pinckney.

Colville, Wash.—Colville and Metaline Transportation Co., under Washington laws, with $5,000 capital; to conduct automobile stage lines. Corporator—S. H. Anschell.

Lakewood, N. J.—Lakewood Garage & Machine Co., under New Jersey laws, with $100,000 capital; to deal in automobiles and maintain garage. Corporators—Joseph B. Hoff, William H. Housen, and R. E. Todd, all of Lakewood.

Kansas City, Mo.—Kansas City Automobile Dealers, under Missouri laws, capital not stated; to conduct automobile shows, etc. Corporators—Philip C. Dodderage, president; Charles F. Ettwein, vice-president; E. P. Morairity, secretary.

Rochester, N. Y.—Murphy Electricity Rectifier Co., under New York laws, with $1,000,000 capital; to manufacture electric charging apparatus. Corporators, Thomas J. Murphy, Walter B. Duffy, George W. Aldridge, Rochester; Richard Murphy, Amsterdam, N. Y.

New York City, N. Y.—Franco-American Taximeter Co., under New York laws, with $500,000 capital. Corporators—Louis Hesse, 154 Elm street, Elizabeth, N. J.; John Kochendorfer, 166 Magnolia avenue, Richmond Hill, N. Y.; and John J. Gallagher, 701 Union avenue, New York City.

New York City, N. Y.—Motor Car Touring Association of the City of New York, The, under New York laws, to promote touring. Corporators—Stuyvesant Fish, Jr., Orme Wilson and Albert E. Gallatin, New York City; Marshall R. Kernochan, Pittsfield, Mass.; Percy Yyne, 2d, Princeton, N. J.

Rainier Removes to New Home.

The Rainier Motor Car Co. this week took possession of its new home on the corner of Fifty-sixth street and Broadway, New York. Although the place vacated was built especially for the Rainier company a few years ago, it has been so far outgrown that the business is now distributed through three different buildings. In the new five-story headquarters all this business of salesrooms, offices, garage and machine shop will be gathered under one roof and the facilities for the company's policy of keeping customer's cars in repair will be greatly improved.

Good Outlook for Trade in Canada.

J. F. McLain, western sales representative for the Franklin company, reports that the most promising automobile field in the west this year is northwest Canada. Contracts twice as large as those of last year have been signed in the territories centering in Calgary and Victoria. The prospects for automobile business in western Canada, according to Mr. McLain, are better than in the Seattle and Portland region in the United States, in spite of a duty of 35 per cent. A number of ranch owners in the Calgary-Edmonton district are now using motor cars for their work.

New and Compact Recharging System.

Back of the Murphy Electricity Rectifier Co., of Rochester, N. Y., which, capitalized at $1,000,000, was late last week incorporated under New York laws, is said to be a recharging instrument or system, which is expected to practically revolutionize the cost and manner of recharging of electric vehicles of all sorts. The complete device, which is the invention of Thomas J. Murphy, is described as being "about the size of the ordinary typewriter and about a tenth of the size and about a twentieth of the weight of the apparatus usually employed to accomplish the same work." In addition to the inventor, the corporators of the company include Walter B. Duffy, a wealthy distiller of Rochester; George W. Aldridge, the up-State political boss and former State Superintendent of Public Works, and Richard Murphy, of Amsterdam, N. Y.

Hewitt Will Not Make Tires.

The Hewitt Rubber Co., which recently erected a large plant in Buffalo, and which was reported to be preparing to enter the tire business on an extensive scale, have abandoned all intentions of the sort. The Hewitt people admit that they made up and experimented with a number of automobile tires, but none will be marketed, as it has been decided to devote all efforts to the production of mechanical goods.

Hartford Changes Boston Location.

The Hartford Rubber Works Co. have removed their Boston business to larger premises in the Heard building, 817 Boylston street, which will be their only branch in Boston. They had been situated for six years in Atlantic avenue, and their reason for moving is to become more centrally located in the automobile district.

Studebaker Opens Two New Branches.

The Studebaker Automobile Co. have opened a branch salesroom in Cleveland for the sale of their electrics. It is located on Euclid avenue near Twentieth street, and Alvin H. Smith, formerly of the Central Automobile Co., is the manager. The Studebaker people are extablishing a branch in Boston also.

Wiedman Adjudged Bankrupt.

Henry C. Wiedman, of Detroit, who indorsed a large volume of the Detroit Auto Vehicle Co.'s paper and "went broke" soon after its enbarrassment, has been adjudicated bankrupt. The first meeting of his creditors has been called for Saturday, 7th inst.

In the Retail World.

George R. Tennant has been appointed receiver for the Northwest Motor Co., Seattle, Wash. The assets and liabilities are not stated.

The Kings County Automobile Co., Brooklyn, N. Y., has assigned. The company did a general garage business and handled the Glide car.

The Whitten-Gilmore Co., which will handle the Thomas line in Boston, opened its new salesrooms last week. The company is located in comfortable quarters at 907 Boyleston street.

Henry B. Hughes is preparing plans for a two-story brick garage to be erected on the south side of Tioga street, west of Sixteenth, Philadelphia. The building will measure 50x100 feet and will cost $10,000.

William Turnbull has just completed what is claimed to be the largest garage in Peoria, Ill. It is located at 225 South Madison avenue, measures 54x171 feet, and has storage capacity for upwards of 75 cars.

William Klockau, a wagon repairer of Rock Island, Ill., is preparing to "go into automobiles." He is building a two-story brick garage adjoining his present establishment and besides engaging in repair work will sell the Ford. The building will measure 37x40 feet, and its cost will be $5,000.

Craig-Toledo Trustee Sues Craig.

Joseph W. Lane, as trustee of the Craig-Toledo Motor Car Co., Toledo, Ohio, has instituted a suit for $18,000 against George L. Craig, vice-president of the company, in United States district court.

The trustee seeks to recover the difference between $2,000 held to be a fair settlement to a creditor and $20,000 allowed Craig in the form of eight Craig-Toledo automobiles at the time the company went into bankruptcy last June. The suit is based on the charge that Craig received a preference over other creditors of the defunct company.

Hathaway is Trustee for Dolson.

C. Roy Hathaway, of Muncie, Ind., has been appointed trustee in bankruptcy by the creditors of the Dolson Automobile Co., Charlotte, Mich. Mr. Hathaway furnished $25,000 bond and entered upon his duties at once.

New Maxwell Factory Soon to Start.

It is expected that the new Maxwell-Briscoe factory in Newcastle, Ind., will begin operations on January 15th. It is stated that orders have been given for the employment of 600 men.

Franklin's New Boston Manager.

H. G. Kilbourne has been appointed manager of the Franklin branch in Boston. Kilbourne is a mechanical engineer and has had long and varied experience as a salesman.

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21½ Per Cent

of all cars shown at the Madison Square Garden Show were equipped with

Midgley Universal Rims

and

38 Per Cent

of all detachable rims on cars in this Show were

Midgley Universal Rims

At the Philadelphia Show, one-fifth of all cars were equipped with the Midgley Universal Rim—61% more than its nearest competitor.

MIDGLEY

MIDGLEY

The Midgley Manufacturing Co., Columbus Ohio

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, Pres. R. G. Betts, Treas.
F. W. Roche, Sec.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, JANUARY 2, 1908

High Time for a Showdown.

It is known that Mr. Thomas Francis Moore possesses a map of the course over which at least he and Mr. Robert Lee Morrell propose to run a stock car race in April next. It is understood that permission to use the roads for the purpose has been obtained and last week the American Automobile Association issued a sanction for the race, not to any club or association, but to Mr. Morrell personally as "chairman" of an intangible something.

Meanwhile, either Mr. Moore or Mr. Morrell, or some of their helpers, are crying out that someone is seeking to undo their work or to render it more difficult, whatever that may mean. But before their cries can be heeded, it should occur to the men concerned that before full faith can be placed in either themselves or their project, they must, to employ expressive vernacular, "play on the level" and show their hands.

When this stock car road race first was exploited the so-called Metropolitan Automobile Association was its sponsor and service for sweet charity was its ostensible purpose. When the Motor World smoked out this so-called organization it was found to consist chiefly of Mr. Moore, whose vocation is that of press agent. Soon thereafter, the latter acquired Mr. Morrell as his "chairman" and since that time no more has been heard of his "association." But it is common report that the "chairman" has been paying the press agent a salary while he has been operating as the "Automobile Manufacturers Committee," which appears to have become sponsor for the race and which is to turn over any "surplus receipts" for "the benefit of the taxpayers of Westchester County." Throughout the whole mysterious proceedings, one feature has remained unchanged—the size of the entry fee. It still stands at $1,000.

There has been too much mystery connected with the whole movement; and where there is mystery suspicion is justified. The Motor World holds no disrespect for either Mr. Moore or Mr. Morrell and it is not opposed to a road race for stock cars under proper auspices. It may or may not prove of benefit to the industry. But when it is sought to extract $1,000 from each of those who would compete, and when a race of the sort on the public roads entails so many possibilities of grave legal complication and responsibility to all concerned with it, it is absolutely essential that the responsibility be fixed well in advance and be fixed clearly and on something tangible. "Robert Lee Morrell, Chairman," despite the fact that Mr. Morrell may be possessed of means, is suggestively indefinite. Of what is he chairman and why? Why his almost incomprehensible payment of a press agent's salary? Why the sudden snuffing of the "Metropolitan Automobile Association"? Why the equally sudden creation of the "Automobile Manufacturers Committee" and the substitution of taxpayers for sweet charity? Who comprise the "Automobile Manufacturers Committee" and who appointed them, and when, where, how and why? What is behind all the twistings and turnings and mysterious gumshoe operations?

If this proposed race for stock cars is not a plain game of graft, why is it not possible to play openly and above board? We do not say that it is a game of graft but if there is nothing in the allegement that the race is merely a play for fat pickings by a party of four or five men, to which as many newspaper workers will be party, why is it necessary to shuffle the cards under the table?

It does not seem possible that any man with a realizing sense of responsibility who desires an event in every way worthy of and industry and who also desires to avoid entangling complications is likely to pay $1,000 into a treasury that seems to have no bottom and which is obscured by so much fog. It is high time for a showdown.

About Converted Pleasure Cars.

As might have been expected sooner or later, free rein is being given to the suggestion that the interests of the commercial vehicle industry may be served to good advantage by converting second-hand pleasure cars into business vehicles by the adaption of a suitable body. Furthermore, the impression is conveyed that this may be done profitably by any one who is desirous of testing the economy of the motor vehicle for business purposes at considerably less expense than would be the case were the original investment to be made for machines constructed especially for the work. Nor does it appear at first sight that such a transformation would be in any way misleading to the investigator, or unprofitable from the ton-mile point of view.

Further reflection, however, develops the point that the car made to carry an eight hundred pound load of human freight at a forty-mile gait over the high road will not necessarily prove as satisfactory when called upon to carry a thousand pounds of merchandise at fifteen miles an hour over cobble stones. Even at its best, the pleasure car is given over about equally so far as its bulk is concerned, to machinery and passenger accomodation. Lengthening the wheel base and strengthening the frame may increase the floor space available for the load, but the sensitive, high speed engine of the touring car will demand extra cooling facilities as well as lower gearing when put to the sober task of commercial use. But here is a suggestion of changes other than the mere construction of a new body, while for absolutely satisfactory service the removal of the driver's position from that behind to one above the motor would be of advantage, in addition to which different tire and wheel sizes, stronger

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springs, and new methods of attaching the body to the frame also would be required to gain the full value of the power available in the motor.

In the second-hand phase of the suggestion is seen perhaps a greater menace to the commercial vehicle than any which has yet been voiced. The questionable properties of the average used car as offered for sale at the average car broker's establishment are well known. Adding these to the uncertainties of the average carriage builder's treatment of the machine, and then putting the relic into the hands of an owner whose only desire is to test the motor vehicle as cheaply as possible—not to test it to best advantage—and the result is at once apparent. Save where the transformation is made at the hands of motor engineers and the trial service performed under really competent management, such an experiment must almost ininevitably result in dismal failure.

Nothing in this may be construed into a disparagement of the pleasure vehicle as a fit subject for conversion to any other use. Such a transformation is not only possible, but may be done profitably under proper circumstances. Just as it is possible to assemble a car successfully from components which may be bought in the open market, so it is possible to use the parts of any car in constructing another, or to alter any car to suit a different purpose from that for which it was originally intended. There can be no question that there would be a legitimate and useful field of endeavor in the conversion of machines in this way, were there sufficient demand to warrant it. But to throw open the door to unscrupulous and syster dealers to unload their battered, surplus touring stock as economical commercial experiments, just at a time when the commercial vehicle movement is beginning to show signs of healthy animation, is to throttle the market for new machines, and invite discouragement on the part of the user, rather than to stimulate both, as is the apparent intention.

Tire Chains and the Highways.

In connection with the recent strictures on the use of tire chains on the roadways of New York's park system there follows the suggestion that whatever progress is being made in methods of highway construction the ideal is still a long way off. Theoretically the road should be made to accommodate the vehicle—not the vehicle to accommodate the road. And whatever limitations are considered ought to be such as restrict the use of materials and methods which react away from the ideal road. Instead, roads which are capable of withstanding the heavy loads of commercial traffic are usually too rough for pleasure vehicles to traverse at even moderate rates of speed, as speed is rated at the present time, while the smooth and beautiful courses of boulevards and parks are wholly unsuited for the stress of laden vehicles.

Reduced to its lowest terms, the construction of the model highway comprehends but two elements, that is to say the construction of a foundation of sufficient strength to stand the wear and tear of maximum wheel pressure and abrasion, and a method of protecting that foundation with a covering which will be at once elastic and waterproof. Simple as these requirements are, however, they yet remain to be satisfactorily fulfilled. From the days of Roman road builders down to the present, while the ideal has been growing clearer and clearer as a vision, the reality has been approached with painful slowness. Even the best roads of the boasted system of Continental Europe require an amount of attention and upkeep which would spell their ruin were it not for the excellent systems in vogue and the cheapness of the labor available for working them. Furthermore, it will be a long time even yet before the manual of highway construction is completed, judging by present indications.

The Excitement of England.

It is unfortunate that in conveying an invitation to "follow our ideas," after having indulged in a "slashing preliminary article," the Messrs. Shippey, of London, should mark their communication to the Motor World "Private." Its publication would add to the interest of the exciting situation which they precipitated in England by privately offering for sale a few 1906 American cars of which they really were not possessed, which private offer was so publicly and indignantly scorned by that valorous protector of the British faith, Mr. Harvey Du Cros.

It may be that Messrs. Shippey are sincere in their belief that they are serving the interests of the American industry by picturing it as being on its "beam's ends" or tottering on the verge of bankruptcy or the brink of panic, but if so, their beliefs are sadly in need of renovation. We are sure, therefore, that they will pardon us for declining their invitation and refusing to follow their ideas. If they know anything at all about the American industry—and they should know something—they are well aware that if anything it is in better condition than the trade of either Great Britain or Continental Europe; it certainly is not in worse shape. It is very evident that in their haste to grasp "a pot of money" without risking a cent, they simply exaggerated wildly and slopped over so badly as to bring up "between the devil and deep blue sea." They were as unfortunate in their choice of men as in their choice of words and methods and have done no good for themselves or for any one else.

As for the shrewd, cold eyed Du Chos, who so courageously saved Great Britain from the "ruination" that might be caused by the "dumping" of 30 or 40 good, if bargain priced, American automobiles—well, there are those of us in America who remember Du Cros when he first began making his millions to which this country contributed at least a small pot. It is quite characteristic that he should wave away the American invasion with his left arm while opening the trap door for the Frenchman, the German and the Italian with his good right hand. That is one of the attributes of true generalship and financial genius.

If the British public has escaped paying 1906 prices for 1905 Continental-made cars or 1907 prices for the 1906 product, it may count itself more fortunate than the guileless Americans and it may therefore have real cause to thank Mr. Du Cros. We became rather used to that sort of "dumping" and at no time did we become half so excited as our British cousins. Perhaps it was because no Shippeys wrote letters to us, or because we had no Du Cros to spurn the cruel offers to "crab" or "control" a "pot of money," and to prove himself his own best press agent. Our British friends should calm themselves.

COMING EVENTS

January 14-18, Hartford, Conn.—Hartford Automobile Dealers' Association show in Foot Guard Armory Hall.

February 1-8, Providence, R. I.—Show in Providence State armory.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory.

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AMERICAN BODIES THE FEATURE

Importers' Salon the Most Beautiful Show Thus Far Held—Slim Attendance Despite Its Attractiveness.

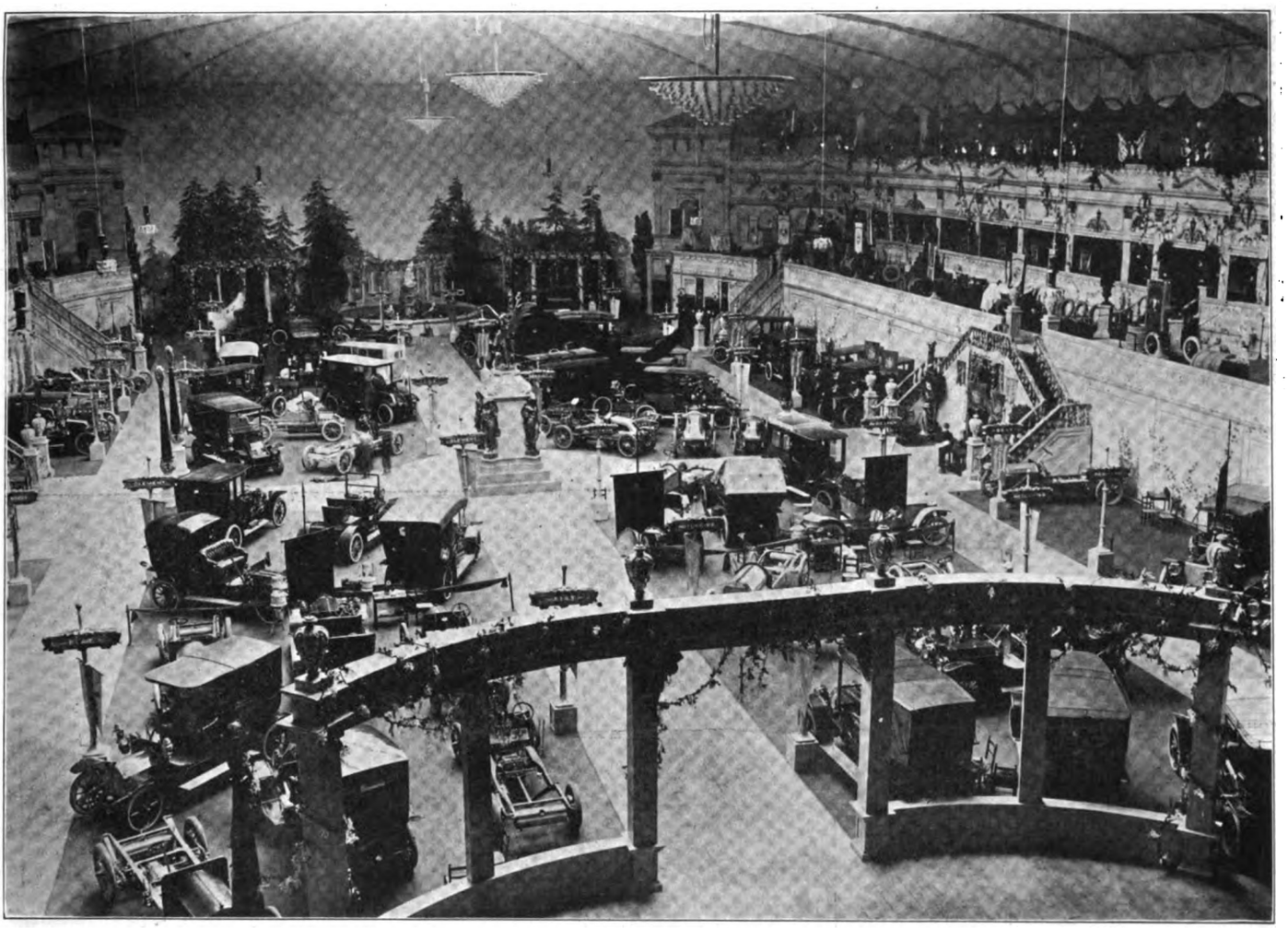
The Importers' Salon in Madison Square Garden, New York, opened on Saturday evening last, 28th ult.; it is still open. It is worth going to see, for it is, regardless of what it contains, the handsomest automobile show ever held in this country. The promoters heralded it as the "Paris Show transported to America," which, of course, it is not. It would not much more than fill a corner of the Paris building and lacks the magnificent signs and electrical displays and other glittering trappings. But the New York show required no such exaggeration, and it is an open question if it does not teach Paris itself a lesson. It presents a beautiful picture—harmonious, restful, pleasing. Purely as a spectacle it is well worth the price of admission.

It may be seen, too, without any of the elbowing or jostling which sightseers suffered at the American shows. For while attendance at the function now occupying the Garden has broken all previous Salon records, there never has been a day when the counting of the gate receipts has entailed overtime work or extra help. The previous record was established by the "Salon" held on the top floor of Macy's dry goods store, when as many as 50 persons were in attendance at one time. During the past several days, there have been several occasions when fully 500 people were present in the Garden. The average evening attendance probably has been between 300 and 400; during the forenoons, the place has resembled a deserted village. The New York public absolutely has refused to "warm up." Even on New Year's eve, when what one mean person described as a "midnight monkey parade" was held, and when the streets were literally packed with jubilating humanity, the attendance was slender. It was hoped that the parade would draw from the crowd, but it failed utterly to do so. Scarcely 300 people witnessed it. It was supposed to represent the "Evolution of Locomotion" and was led by a monkey or rather a man in monkey garb. The man's identity was not disclosed. The tail end of the parade was an Italian automobile, the agent of which, according to press agent report, paid $450 for the privilege.

The parade was largely a "frost" and if the attendance throughout the week also has been attenuated, it has in no way militated against the beauty of the show.

The decorative scheme comprehends the reduction of the huge Garden to a simple oval arena which, with the aid of the drop curtain at the eastern end is transformed into a graceful court of honor with intersecting central aisles, elevated platforms at either side and a peristyle directly in front of the drop partially surrounding a circular fountain of classical nude female design upon which colored lights are made to play from the balconies above. The presence of real evergreen trees about the fountain blending with the picture on the curtain gives an effect of distance which is at once harmonious and pleasing.

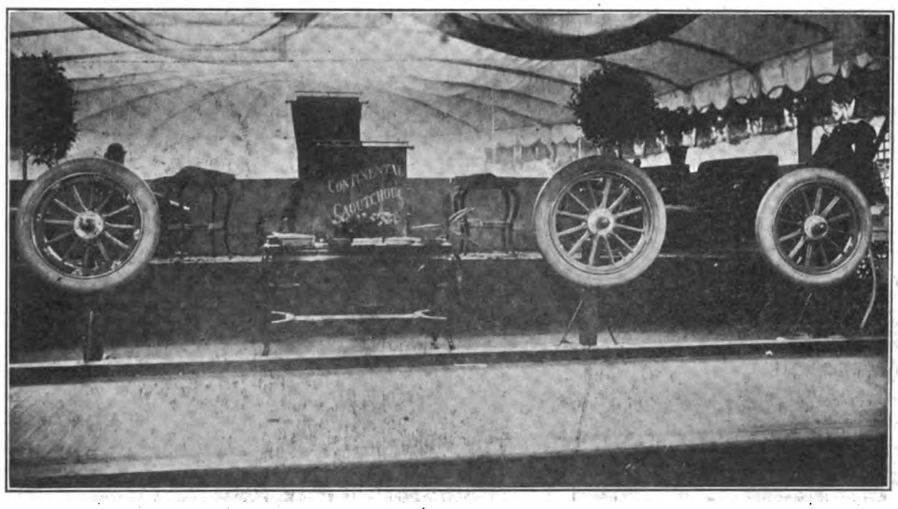
The ceiling and floor coverings are of soft light green tone, the aisle floorings being brown. The balcony fronts and walls are in imitation marble, ornamented here and there with gay bannerets and placques, and the lights are so disposed as to give an even illumination without glare. Each of the exhibits is signalized by a white post



GENERAL VIEW OF THE IMPORTERS' SALON IN MADISON SQUARE GARDEN

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at either corner, bearing a blue transparency giving the name of the car exhibited in white letters, while below are hung banners giving the exhibitor's name in golden letters on a blue silk background. The bases of these posts are illuminated from the back, shedding a foot-light glow on the stands. The accessory exhibitors are all placed on the elevated platforms at the sides, the decorations being in keeping with those



CONTINENTAL TIRE EXHIBIT

on the floor, while over all, from the western end a framed painting of three undressed and winged ladies in some sort of ecstacy, peeps down over the huge blue flaming legend, "4th Importers'."

There is no crowding of cars or of visitors, no gaudy color effects, nothing to jar or disturb the sensibilities. From the little bowers back of the platforms on either side, where are easy chairs, and tables, to the concert hall, which is given over entirely to a grass plot with gravel walks running through it and a loan exhibition of pen and ink drawings, it gives ever more the effect of a show picture than of a real show.

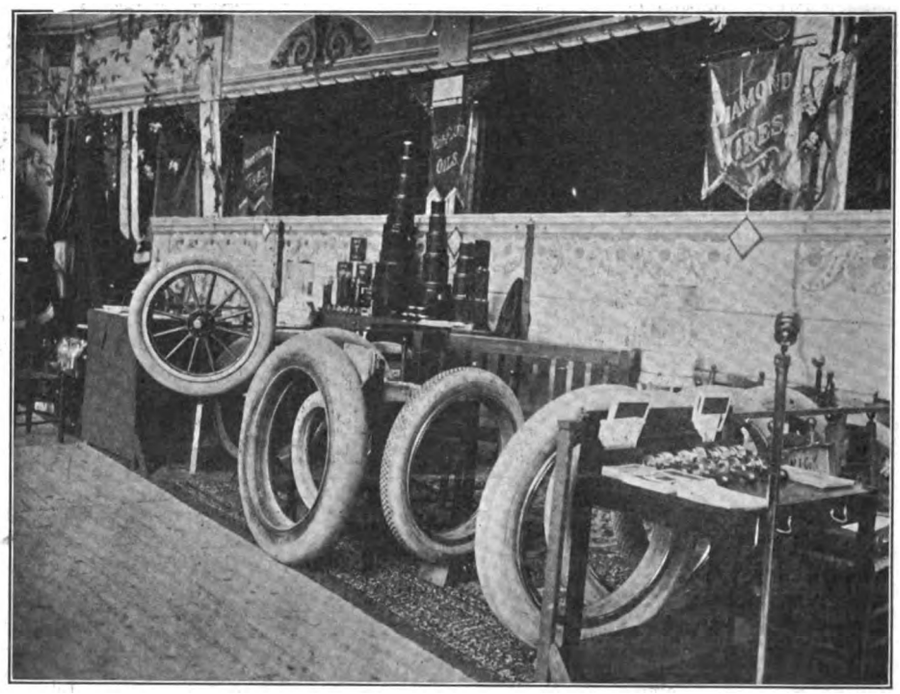
There are 94 vehicles grouped about the stands on the main floor, of which 25 are shown in chassis only, the closed type of body being most conspicuous among the body shapes. Whatever the value of the show in other respects, the beauty and finish of the bodies is of unquestionable superiority and shown to better purpose than ever before on a similar occasion. In fact, if the show is possessed of any particular marked or significant feature it is the display of American bodies of foreign cars.

About half of the bodies on view are of domestic manufacture. That they compare favorably with the imported constructions merely supports the often repeated contention that the American carriage maker has no equal in any other country. As a matter of fact, of the whole number of 77 bodies shown mounted and dismounted, exactly 38 are home production.

Among the interesting features observable in the foreign built bodies, may be mentioned the disappearing seats seen in the Rothschild bodies which fold down forward and lie concealed back of the front seat when not in use, even their iron supports being hidden in grooves in the floor under the carpet. A hooded Victoria body with enormously high backed rear seat and flat canopy reaching from the top over the driver's seat to the wind shield, is shown to good advantage on an Isotta chassis. Another novelty is the five-seated touring body on the Maja car, which has an individual removable seat in the center of the tonneau instead of two, and divided rear seats of the bucket type.

As for the mechanical details which may be noted as of passing interest, there is the construction of the new shaft-driven Panhard, with its progressive type change gear in which the shortening of the case brought about by the use of two sliding gearsets has made possible the use of a master clutch enclosed in the same case with the gears, and also a novel system of brake equalization. The final driving system of the new F. I. A. T. made-for-America cars has a particularly substantial appearance owing to the use of the massive torque tube and its hinged mounting in the frame. The Hotchkiss gearset, in which the reverse idler is swung into mesh from above instead of below the lay shaft, offers a suggestive arrangement for investigation, as does the Renault method of operating the selective gearsets by means of a face cam. Perhaps the most unusual vehicle in many respects is the new light model C. G. V., which has the driver's seat on the left, with the brake and gear changing levers in the center of the foot board.

The cars exhibited are as follows: Bayard-Clement, Renz, Bianchi, C. G. V., Delahaye, Delaunay-Belleville, Dietrich, F. I. A. T., Hotchkiss, Isatto-Fraschini, Maja, Panhard-Lavasseur, Pilain, Renault, Rochet-Schneider, Rolls-Royce and Zust. In addition, Messrs. Brewster, Quinby and Rothschild also occupy spaces on the main floor.



DIAMOND TIRE EXHIBIT

The accessories division is represented by some thirty-six exhibitors, among the more prominent of which are the Diamond Rubber Co., Hartford Rubber Works Co., Continental Caoutchouc Co., Warner Instrument Co., Hartford Suspension Co., Dow Tire Co., Charles E. Miller, C. F. Splitdorf, Lavalette & Co., Michelin Tire Co., Robert Bosch, Inc., and Levi Rubay.

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PHILADELPHIA'S MODEL GARAGE

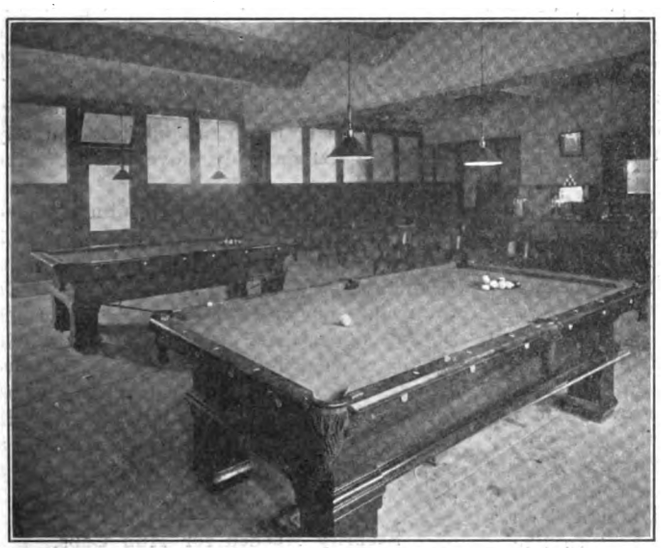
Opened with a Society Function—Its Equipment Complete for Business, with Provision for Recreation.

Broad street, in Philadelphia, has acquired a garage de luxe which in its accomodations for the chauffeur and in its beauty of decoration and finish sets a highwater mark. The opening of the new building was made a "society event," at which time the evening clothes contingent were given an opportunity to inspect it. The garage is under the proud proprietorship of the Keystone Motor Car Co., the Quaker City agents for the Packard, and is located at 216-218-220 North Broad.

The building is of four stories and has high ceilings and broad expanses of window space to give plenty of light. The Broad street entrance to the show room is elaborate to a degree suggesting the entrosal of a fashionable hotel. The cement floor is strewn with rare Persian rugs and the desks of the salesmen and the other articles of furniture are in the subdued but rich Mission style. Show cases of supplies and accessories are also finished in the same style. Back of the show room is a garage room, separated by sliding doors, all cars entering from the street at the rear of the building.

A broad stairway rises to the mezzanine floor, which in front has a balcony overlooking the show room and in the back a similar balcony over the garage room. On this floor there is a ladies' reception and retiring room, and the private offices of the president and general manager and the general offices for the clerical force are also located here. The back part of the second story is given over to the chauffeurs, and as shown in the accompanying illustration, the provision for their comfort and entertainment has been very complete. In addition to steel lockers for about 100 men, there are several shower baths, and a smoking room with two billiard tables, chairs, and a lunch counter where light lunch and cigars may be obtained.

The third floor is a single room using the full width and length of the building, 53 by 200 feet. The room is without a pillar, and is used for the storage of cars. The top floor, in addition to a very completely equipped machine and repair shop, has a large stock room where everything is classified and stored in accordance with a catalogue. From the basement to the top floor runs an elevator big enough to take any car, and on the third and fourth floors are steel turntables adjacent to the elevator shaft, which is rather a new feature in garage construction. Altogether the building is in many respects a model combination of ornateness with practical and utilitarian virtues.



WHERE RECREATION IS ENJOYED



WHERE LABOR IS PERFORMED



PHILADELPHIA'S GARAGE DE LUXE

ABOUT ACETYLENE GAS CYLINDERS

Engineer Bowmanville Explains Some Causes of Explosion—Faulty Construction One of the Most Frequent.

"In the Motor World of December 25th, I came across the item headed "Prest-O-Lite again visited by fire." As I am the man who introduced that system in the United States, and who sold the patent to the Commercial Acetylene Co., 80 Broadway, New York City, of which company I was for four years the chief engineer, I cannot refrain from saying a word about the use of acetylene gas compressed in acetone and porous material, for the purpose of automobile lighting; writes Eugene Bowmanville, of Jersey City, N. J.

"If the gas cylinder, used on automobiles, was manufactured, by carefully following the patent and method of the Commercial Acetylene Co., explosion of gas tanks would be impossible. Personally, in several instances, for the purpose of demonstration, I have roasted fully charged cylinders of the Commercial Acetylene Co., leaving them in the fire until the fittings and safety device were partly melted, thus allowing the gas to escape, without producing any explosion; railroad cars, boats, etc., equipped with cylinder, properly made, have been destroyed by fire, but the cylinder was recovered intact, after the fire, except that the fitting and connection was partly melted but no explosion occurred. Accordingly, the cause of automobile cylinders exploding is from defective construction or other cause which may be one of the following:

"I notice that all makes of automobile gas tanks, with one exception, have brass and copper valves, and fittings. That the pressure gauge has its spring tube made of copper or brass, and the most strange and ridiculous of all is, that some gas tanks

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have their safety device made of brass and copper, when it is well known that those two metals are a source of danger through the formation of acetilite of copper, when in contact with acetylene gas. At a pressure above 2 atmospheres, acetilite of copper may cause the cylinder to explode, when the temperature of the cylinder is above 90 degrees.

"Furthermore, the purpose of the porous material is to isolate the gas in the small cells so as to prevent the propagation of the explosive wave, through the whole cylinder, for that reason the size of the porous cell must not be larger than 1-60 of an inch, while most of the gas tanks on automobiles have been filled with loose asbestos fibre and introduced into the tank through spud opening without a binding material of any kind, to prevent the asbestos fibre from settling by the vibration of the car, which materially will leave an empty chamber in the cylinder, consequently rendering useless the balance of the porous material. With that state of affairs, explosion must happen for one reason or the other. Then, if a gas tank explodes amongst other defective ones, they will all go off, one after the other, from the effect of the concussion, while if gas tanks are properly made, explosion or fire will not affect them."

Test for Weak Valve Springs.

It sometimes happens that a motor which has lost its liveliness of action will be found on examination to be suffering from weak valve springs. Invariably this prevents proper closing and to some extent interferes with the timing of the motor. A good test for this complaint is to insert the end of a screwdriver blade between the convolutions of the spring and twist it slightly so as to increase the tension. If an improvement in the running is visible at once it may be taken for granted that the difficulty is resident in the valves and in the particular valve under examination. Similarly a test for too strong a spring is merely to press lightly toward its fixed seat with the screwdriver blade, paying careful attention to the effect on the action of the motor.

The apparent requirement of a stronger spring, however, should not invariably be taken as proof positive that one is required. In case the valve stem happens to be bent out of line, or is too tight a fit for its guide, the sluggish action which this develops may result in a loss of activity on the part of the motor which the increased strength of the spring will apparently cure. Hence when replacing or strengthening a spring which seems to be over weak for its work, care should be taken to see that the stem runs smoothly and straight in its guide.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

ELECTRICAL BRAKE FOR TESTING

Principle of a New Device for Measuring Horsepower—Its Practical Effect and Formula of Readings.

In the effort to devise more accurate and satisfactory methods of testing actual horsepower of automobile motors various ingenious systems have been evolved to supplant the ordinary brake test mechanism. Electrical systems came early in this development and there are at the present time a number of testing outfits in use in American automobile factories which depend upon electrical generation and absorption. In a few instances hydraulic testing devices have been devised, giving a high degree of accurate service, but that the field for ingenuity in this direction is still very wide and inviting is indicated by the new devices of this character that are from time to time brought out.

Of these one of the latest is the product of Messrs. Morris and Lister, electrical engineers in Coventry, and by reason of the fact that it differs materially from the systems so far shown, it is entitled to comment. While it is electrical in a sense, it differs from the usual electrical testers in that the motor under test is not called upon to generate current, but to overcome the magnetic resistance primarily set up by current from ordinary sources. A ring structure containing a number of electromagnets around its faces is mounted on a central shaft on which it may turn like a wheel on its axle, except that its rotation is limited to a small arc. Coupled directly to the crank shaft of the motor under test are two copper discs, which rotate on the same axis as the floating magnet frame just described and which have their faces close to the poles of the magnets. When electrical current is sent through the windings of the electro-magnets, what are known as "Foucault currents" or "eddy currents" are generated, creating a resistance to the turning of the discs when the magnetic floating portion cannot revolve also. A weight beam extends at one side of the floating portion to prevent its rotating with the discs because of their electrical or magnetic unity and the degree of pull which the discs exercise on the floating portion is measurable by means of the weights hung on the beam and their distance from the fulcrim.

By regulating the amount of current in the magnets and putting the weights at the points where they balance the drag of the discs the reading at any motor speed may be taken. Increasing the current to the magnets and putting extremely heavy weights on the beam can be done to a point where the motor under test will be stalled because of the resistance to the rotation of the discs.

In practical effect it is like a prony brake, except that it quite does away with the troubles incident to disposing of the heat of friction and to the inaccuracies resulting from constantly varying frictional resistance. The work performed is ultimately dissipated as radient heat from the discs, the eddy currents set up in them resulting in their increase in temperature. The discs are fitted with fan blades which help dispose of the heat as they revolve. It is a simple substitution of magnetic drag for friction and the switchboard permits of a very fine degree of regulation of the pull. The power is weighed just as it is in with the prony brake, and while electricity is employed, there is no complication of expensive generating mechinery and resistance sets. The particular advantage of the system lies in the possibility of applying the load to the motor under test evenly and without shock, as well as that once the current has been adjusted the load is unvarying and may be maintained indefinitely without danger of overheating the brake.

The formula used for the readings is one in which the brake horsepower equals 2 times 3.1416 times the distance of the weight from the center of the shaft in feet, times the weight in pounds, times the revolutions of the copper discs per minute, the whole product divided by the constant 33,000, giving the direct figure. The machines as at present made are suitable for from 3 to 35 horsepower, and will take 1,500 r.p.m. on a small engine down to 750 r.p.m. for a larger size.

Security Needed for Hub Caps.

With the ordinary double chain drive, or with the old-fashioned type of live axle, no particular difficulty was attached to the loss of one of the rear hub caps, other than that opportunity was afforded for dust and dirt to work their way into the bearings. With the modern system of clutch driven rear wheels, however, the loss of the cap frequently involves the possibility of working out the driving shaft thus freeing the wheel of its drive and turning adrift one side of the differential. On this account it is somewhat to be wondered at that makers do not take more pains to secure the hub caps in place by some locking device, especially as far as the rear wheels are concerned, thus safeguarding a transmission system which otherwise has few faults.

Care in Removing the Magneto.

Magneto mountings frequently are so arranged that the entire device may be removed from the car by simply loosening one or two screws. The operator should invariably take pains to see that the driving gear is plainly marked to indicate the proper method of reassembling, however, before taking out the magneto, as otherwise it may be practically impossible to get it back without going over the timing in exact detail.

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BROKERAGE IN SECOND-HAND CARS

Methods of Operation That May Eliminate the Second Hand Dealer—Bringing Principals Together.

When a prospective purchaser of a motor car starts in to price new machines and finds that the cost of well-recommended makes is high, and then notices newspaper advertisements, offering "slightly used" second-hand cars for sale at remarkably reduced prices, he is set thinking. The expectant owner may not be in a position to afford the price of a new car of a certain make that he would like, and at the same time, may hear of a second-hand machine of the same model, which has been in commission for a few months and can be had at a cost that would come within his reach.

The question that confronts him is: will it be worth while to buy this used car? Would it not be better to pay the same amount for a new machine, listing at a lower figure? Will this car that has been in commission for a period of some months last as long as a new car of cheaper design, to be had for the same price as is wanted for the used model?

This is what a person has to consider carefully before he signs the check and as a motorist friend remarked to me recently, the choice of a car is like the choice of a wife. You never can tell. Of course, the wiseacre who thinks he knows it all, but in reality has had no experience with cars, will tell you that a man is a fool to buy a second-hand automobile and that he will regret it sooner or later. However, having been associated with many people connected with the motor car industry, as well as members of automobile clubs and numerous motorists generally and having been a motorist myself, I have learned from good sources that there is another side of the question. I have learned that in many cases a man will strike a profitable bargain in a second-hand machine. The essential thing for a prospective purchaser to know, is when to buy and when not to buy a car that has been used.

Ignoring for the present, the case of intimate friends selling a car to one another, when the deal is more or less personal, I will venture a few remarks on what my experience among persons who have had transactions with concerns dealing exclusively in used automobiles, has been. Personally, I have nothing against those engaged in the second-hand car business, but I have learned from numerous customers of these, that in many cases, in fact in the majority, dissatisfaction has resulted on the part of the purchaser. The reason for this is simple. A man has a 1906 car that cost originally $3,000 or $4,000, and has stood some rough useage and has been driven may be 10,000 miles. It may have no real mechanical defects, but at the same time needs priming up, new tires, batteries and other parts, and sooner than go to this expense, the owner prefers to sell it and buy a new machine. He may wish to make a European tour and purchase a foreign car while abroad. So he offers his car for sale to a dealer in "hand-me-downs" and the latter tells the owner that he is willing to give four or five hundred dollars cash for the car, as it stands. The car probably has this much worth of accessories and improvements on it and naturally, if the owner thinks his toy is worth anything at all, he will refuse to sell it at such a low figure. On the other hand, he may consider that the machine has seen its best days and is about to fall apart and so he takes the $500 cash, which just about pays his wife's millinery bill and buys him a pack of cigarettes.

The second-hand dealer then puts a man at work on the car to "touch it up" and put some varnish on it and squirt some oil in the engine base to try to ease up some of the "knock" in the cylinders, and he may have the poor little worn out valves reground, so that there may be a little compression in the lungs. Then a buyer is influenced to take it home to his wife for only $2,000. This is the buyer who gets "stuck." It happens almost daily.

Purchasing under the above conditions (which may not be known to the buyer who has been deceived and lied to), is a very poor proposition. Now here is another method, which I have known to give satisfaction to the buyer in many cases. My opinion is entirely unbiased, as I am in no way connected with any retailing concern.

There is, in a building on Thirty-fourth street, New York City, a man well known in automobile clubs and among motorists and the trade generally, who is noted for an amusing little joke he plays on people. One morning some months ago, he advertised a second-hand car for sale, in a daily paper. About 10 a. m. a man called at his place of business in response to the ad. The caller was somewhat surprised at finding the gentleman in a small office on the ninth floor, and asked:

"Where is that car you have for sale?"

"Here it is," replied the advertiser blandly, "right here."

With that, he removed a toy automobile from a desk drawer, wound it up and rolled it across the floor.

"Don't you think she runs smoothly?" he inquired.

The man with the small car was not a lunatic, as his caller may have imagined at first. He is repeating the same trick nearly every day for other callers, for this person is an automobile broker, doing a legitimate brokerage business in second-hand cars, for clients who wish to buy or sell the same. Here is where his business differs from the ordinary second-hand dealers. He acts much the same as a real estate or insurance broker, merely putting the buyer in touch with the seller, the broker not attempting to handle the car for sale or have it on his hands at any time during the transaction.

For instance, Mr. Jones desires to pay a fair price for a fifty horsepower 1906 high grade car, that has been carefully used, one that is in perfect order and not requiring any repairs. He cannot find what he wants off-hand and has not the time to spend in searching for a car that will suit him. He goes to an automobile broker and states his wish, paying no fee whatever and it is understood that he will not pay the broker a fee at any time in the future either, (for a broker making any charge to a buyer-client, is not legitimate). Now the broker knows of a Mr. Smith on his list, who has just such a car as Mr. Jones wishes to buy. The amount that Mr. Smith wants, is about what Mr. Jones is willing to pay. Satisfying himself that his clients are both responsible parties, the broker arranges an appointment so that Mr. Smith may give the prospective customer a demonstration. The dicker for the sale of the car is made between Messrs. Smith and Jones, the broker not entering into the case at all. The whole business is done openly. When the transaction takes place, the broker receives a commission of from 5 to 10 per cent. from the person selling the car.

To my mind, this is a fair, legitimate commission for his services, in bringing the two parties together, it being remembered that the broker advertises the car for sale in daily papers, until the right purchaser is found, assuming all the expense and risk in such cases. Thus by going to a broker, a purchaser of a second-hand car, is put in touch with the right person, free of all costs, and he is reasonably sure of getting a car that has merely been in private use and not an old broken down "tub" that has been banged around by garage employes and used for business more or less, and then rebuilt several times and painted. The transaction becomes about equivalent to the case of a man selling his car to a personal friend, although often more satisfactory than a "friendly deal." If the broker consulted is what he should be, he will only do business with responsible private persons and not with dealers in second-hand cars. If a broker tries to send you to a dealer, don't listen to him. A good broker will not attempt to sell a car for a client, which he knows to be defective in any way.

There is absolutely no good reason why a man should not purchase certain machines that have been in use for a short time, when the price asked is reasonable. A car that has been used for a few days by an owner, becomes a "second-hand" affair and depreciates at least 20 per cent. in value, although it may be in perfect condition. Indeed, it is a well known fact that a car often runs better after having been run six or eight hundred miles, than it ran the day it left the factory. Any one of a num-

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ber of reasons may be the cause of a man desiring to sell a car when it is in perfect condition. One very common reason, is that an owner wants a higher-powered machine that will make 60 miles an hour. Severe illness, necessitating confinement indoors is another. A cause that is not unusual, is that owing to the tight money market, a man is forced to give up his little luxuries, for as a well known dealer once remarked, three-quarters of the motorist body are persons who cannot afford automobiles. A desire to tour abroad is another excuse for an owner wishing to dispose of an American car, while a death in the family sometimes warrants a person giving up the automobile, either for financial or other personal reasons. The mere fact that a man has a car for sale, does not say that the machine is unworthy. By dealing direct with the persons selling a car, with the aid of a broker, it is not difficult to determine the actual reasons that warrant the car being sold.

At present, there is a demand for used 1906 and 1907 models in good condition. A 1908 American-made car can be sold for about 50 or 60 per cent. of its list price. Second-hand 1907 cars are worth slightly more. From 5 to 10 per cent. commission is the proper fee for a broker selling a car under conditions described. Whether or not the second-hand automobile is a bargain, depends entirely upon the car, its personal history and the price.

M. W. C.

Worcester Show is Abandoned.

Worcester, Mass., will not have an automobile show this winter. This was definitely determined Friday last when it was found that the Worcester armory, where last year's exhibition took place, could not be obtained this season. There is no other place in the city available, the auditorium in the armory being the largest in the city. About a week ago the State took over the armory from the City of Worcester and now the local authorities have nothing to say whatever about its future conduct. The State authorities last week refused to permit the armory to be used for an automobile show in spite of all the influence members of the Worcester Automobile Club could bring to bear in the matter. They found the authorities more unbending than those of some other States.

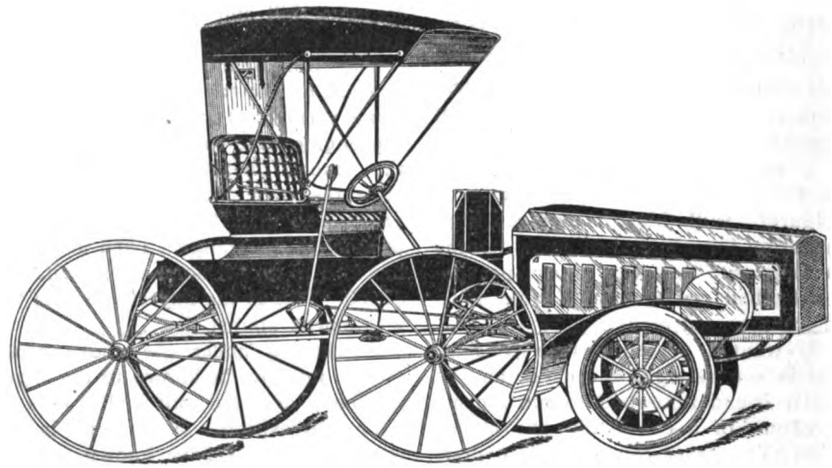
Incorporated to Hold Newark Show.

The joint committee composed of members of the New Jersey Automobile and Motor Club and the New Jersey State Automobile Dealers' Association, under whose auspices the first annual automobile show will be held in Newark, N. J., has decided to form a corporation to carry on the exhibit. It will be known as the New Jersey Exhibition Company. The show will take place from February 21 to 29 inclusive, in the auditorium at Electric Park, a resort in the Vailsburg section.

HERE'S THE "IRON HORSE" AT LAST

It is "Caldwell's Cylinderless, Boltless, Noiseless, Cussedless Gasolene Engine" —Works Running or Standing.

In common with the search for the fountain of youth, and the endeavor to "harness" perpetual motion, the quest for the mechanical horse has been going on for many, many years; in the motor car, the mind of many a restless inventor has found peace and longing satisfaction. But it is not to be questioned that the motor car is not a substitute for the horse in the strictest sense of the word, since it cannot be applied at the will of its owner to the hundred an one uses which have endeared the patient equine to his ancestors for centuries back, nor can it be used in connection with the "rolling stock" already an outstanding investment with the horse owner. To some it might even appear that the so-called motor buggy is the nearest possible approach to the ideal in this respect. Not so with the persistent Iowa inventor of the "six-wheel runabout" here depicted. His genius has carried him a step beyond the achievements of all others and enabled him to produce the veritable "iron horse" of fiction and fancy.



THE "IRON HORSE" HITCHED TO A BUGGY

Although possessed of a motor, perhaps as an attribute to the mechanical arts rather than as a necessity of locomotion, this metal beast according to its inventor's claims has "no cylinder, no bolts, no nuts to work loose, no gaskets to blow out, no packing of any kind." Instead, the "cylinderless, boltless, noiseless, cussedless," gasolene engine, whence springs the locomobility of this locomotor attachment is comprised of a moving "piston" which is hollow and slides back and forth upon a stationary "head," thereby providing means to effect a series of operations identical in principle and effect with that of the ordinary four-cycle method of gasolene operation.

Two-thirds of the six-wheel runabout is buggy. The useful reminder is attached to it by what in farm parlance would be known as the "shaves" and through them, transmits its tractive effort to the vehicle proper. As will be evident at once, the cylinderless portion of the outfit is attachable to any sort of carriage or wagon, and furthermore, by suitable adaptation, may be used as a stationary power producer for such useful and domestic operations as sawing wood, grinding coffee, spices and cattle fodder, breaking out stump land, or planting grain. The mechanism also may be attached to a sleigh or bob sled for use during snowy weather.

As for the mechanical portion itself, the motor is rated at 10 horsepower, showing its absolute capability of replacing one or two horses; the plant is firmly mounted on the truck, which, in turn, runs on 1⅝-inch artillery wheels, 30 inches in diameter, shod with 1⅝-inch solid tires and running on roller bearings on a 1⅝-inch axle. A year's guarantee goes with the mechanism, which is moreover, a better inducement than the average horse trader is able to offer in the same line.

Certainly the device is peculiar looking to the normal eye. But then, as the inventor says: "Odd things are generally the best." Further, it is evident that a great deal of energy must have been spent in producing it. Of this the inventor further remarks in his catalogue:

"Many of the best skilled machinists and gasolene engine experts have worked on this invention for the last three years,, and no one but the inventor can appreciate the patience and persistent efforts necessary to overcome the obstacles ever presenting themselves in working out the intricate mechanism of a useful and valuable invention, and their reward is the protection of the government in their rights under the patent until they are reimbursed for the money and the tedious, thoughtful hours that have been spent on it."

A company to manufacture the thing is in existence in Waterloo, Iowa.

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MAGNETO SPARK AT FIRST SWING

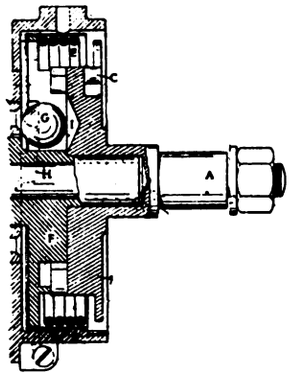
Obtained by a Device for Automatically "Snapping" Over the Armature—Details of Construction.

One of the most frequently stated objections to the magneto is the difficulty of "swinging" a large motor with sufficient rapidity to obtain a positive spark for the first ignition. To overcome this difficulty, as well as the possibility of stopping the motor for the same reason when throttled way down or when suddenly overloaded, several methods of producing a sudden throw of the armature past the point of maximum current generation have been devised. One of the most recent of these, which is particularly suggestive because it provides a means for automatically "snapping" over the armature whenever it is run slowly, regardless of whether the motor is being cranked or is running under its own impulses, is that employed in the Unterberg-Helme high-tension magneto, a German production shown for the first time at the Paris Salon.

In this arrangement, the armature instead of being driven through a positive connection has a spring driving gear, the spring being sufficiently strong to keep the armature in absolute synchronism with the driving gear under ordinary circumstances. When its speed is dropped below a certain predetermined amount, however, a peculiar form of automatic latch comes into action as a result of the reduced centrifugal force, and serves to retard the motion of the armature for a portion of its revolution, releasing it at the instant of timer contact and thus permitting the spring to drive it ahead of the timing gear for an instant and at a sufficient rate to guarantee the generation of a proper spark. The manner in which this is accomplished is shown by means of the accompanying illustrations.

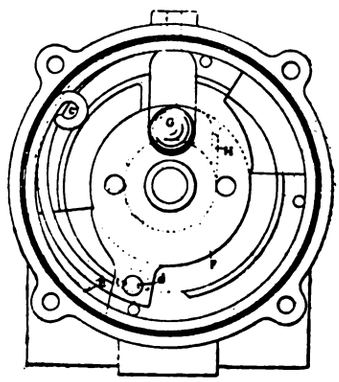
As is apparent, the driving shaft, A, carries a disc, B, to which one end of the helical spring, E, is attached by means of the stud, C, fixed upon its inner face. The other end of the spring is attached to the armature shaft by means of the stud, d, affixed in the face of a plate of peculiar shape which is keyed to the shaft. Upon the side opposite the stud, d, is a projection carrying the radial slot shown in the illustration, which is of such size as to permit the ball, G, to travel freely in it under the action of centrifugal force.

When the ball is at the outer end of its slot, the armature is permitted to turn freely as driven through the spring. When it is at the inner end of its travel, however, any rotation of the shaft, causes the ball to strike a projection H, on the end of the stationary armature casing, thus temporarily locking the armature from further rotation, and permitting the continued movement of the driving member, B, to wind up the spring. At a certain point, I, in the disc, B, however, is a slight depression into which the ball is forced when the disc has made nearly one complete turn. The effect of this is to permit the ball to jump over the projection, H, thus allowing the spring to force the armature ahead at high speed until the ball again brings up



against its stop, when the process is once more repeated.

In this way at low engine speeds the armature motion is intermittant, and invariably at high speed, while so soon as the motor speed becomes sufficiently great to drive the ball to the outer end of its radial slot, the motion becomes continuous and regular. The magneto to which this arrangement is attached is of the true high tension type, having both primary and secondary windings on the armature and hence requiring no external transformer coil. An unusual feature of its construction, however, is the placing of the condenser, which is mounted in the stationary casing of the timer box, whereby it is relieved of some of the vibrations usually sustained in the armature, and is thereby rendered more durable.



Keep Motors Warm in Winter.

"Keep your motors warm," is the advice of H. E. Coffin, vice-president of the E. R. Thomas Detroit Co. "In the winter weather when the car is run at speed, the cooling properties of the radiator are much greater than in warm weather. A motor will start easier and run better if a sheet of cardboard or other light material covers part of the radiator."

READINESS IN MAKING REPAIRS

Parisian Mechanics in Unique Competition to Demonstrate Ability—Judgment as Well as Skill Tested.

A unique form of breakdown competition took place at a motor cab garage in Paris recently in which a number of drivers were called upon to rectify some artificial disorder of the machines under test within a stated length of time and under observation by the judges. Each of the cars, all of which were identical in construction, was placed in a curtained enclosure and only the competitor who was to work on it was admitted to the enclosure with the judges. The difficulties which had to be set right were in no case of a serious nature, being only such as the average driver might be called upon to repair on the road at any time. Thirty-two mechanics entered the lists, and after the preliminary trials in setting right certain engine difficulties, the successful competitors were permitted to compete in a tire replacing time trial.

In one instance a short circuit was created in the magneto by introducing a little piece of lead foil in an inconspicuous place. This was discovered by Paul Miltgen in 1 minute 28 seconds. Only five out of ten competitors succeed in locating the trouble inside of the allotted 25 minutes, and only two of these excepting Miltgen, came inside of 4 minutes. The second difficulty proved to be a partial stoppage of the induction pipe, but only one competitor was able to discover it, and it took him 11 minutes to do so. Another driver, Bonnet, by name, took just 4 minutes 45 seconds to hunt out a choked carburetter jet and get his engine running, while the sticking float valve was adjusted correctly by Lallement in 1 minute 23 seconds.

Bonnet, second in the general classification, won first place in the tire replacement trials, removing, repairing and replacing one of his tires in 9 minutes and 46 seconds. Miltgen, who won first place in the adjustment trials, lost the tire competition owing to a lame arm. The idea is held to be particularly successful in a general way because it furnishes useful training for the men, sets them thinking and discussing the problems involved, and besides furnishing considerable interest as a contest, is simple and inexpensive to conduct.

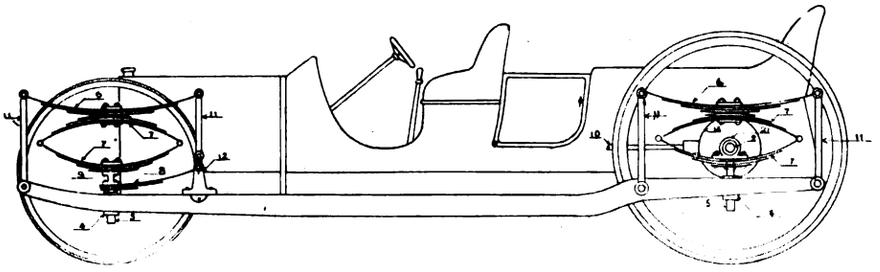
It is extremely difficut to impress upon the average driver the importance of frequent regulation of the spark time. Running conditions vary so constantly when the machine is on the road, that it seldom happens a single setting of the spark will serve to best advantage for any length of time. Therefore the operator's finger should never stray far from the controlling lever.

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PROBLEM OF THE HIGH WHEEL

Solution Offered in the Form of a New Spring Device—Details of a System of Low Suspension.

According to the ideas of many engineers, the only conceivable way of reducing the mounting and suspension of the motor vehicle to a point where it will be practicable to eliminate the pneumatic tire and replace it with solid rubber is to adopt the high wheel. With the high-wheeled buggy type of vehicle this is possible without effecting any material alterations in the structure. It is evident, however, that for



the larger and heavier vehicle, where it is necessary to lower the center of gravity materially, an entirely new system of springing must be devised in order to render possible the use of large wheels. A novel suggestion in this line is found in the system recently designed by Henry Pokorny, Indianapolis, Ind., in which a special type of "three-half" elliptical spring, as it may be termed, is made use of, together with an under-slung frame with low center of gravity and general structural features otherwise similar to those in common use with standard touring cars.

The design in question, which is here illustrated, comprehends the use of wheels of 40 and 50 inches diameter, front and rear, shod with solid tires and mounted on axles of the usual I-beam and tubular type respectively. The lower sides of the main, or elliptical portions of the springs are slung beneath the axles in special perches while the shackle bars are made of sufficient length to lower the frame to the desired clearance above the ground notwithstanding the great height of the spring set. In addition to this, the oscillations of the frame are confined to the vertical sense at both ends by means of guide bars riding in blocks on the frame, but attached to the axles by means of couplings to which they are affixed through ball and socket connections.

Turning to the application of the system to the near axle, it will be clearly apparent that the main spring, 7, is clipped to the secondary semi-elliptical member, 8, and rides in the perch loosely mounted over the axle tube, 2. The frame is supported by the shackle bars, 11, the part indicated by the numeral 3, being dropped even lower than the rear end, thus lowering the center of the frame sufficiently to permit the adoption of the side entrance type of body. The driving shaft, 10, and differential housing, 14, are outlined in their natural positions, showing their extreme height in the body, relatively speaking.

In the case of the front axle the disposition is practically the same as in the rear except that to the other springs is added a guide spring, 8, which is of quarter elliptical shape and extends from the shackle bracket, 12, on the upper side of the frame, to the lower side of the axle, 9, thus serving to restrain its motion at the same time tending to interfere with any possible excessive rebound which might occur. The rear and front shackles of the front spring are of different lengths in this instance, owing to the introduction of the guide spring and the bracket upon which it is supported.

While there are many arguments in favor of the use of the high wheel, hinging chiefly about the matter of gentle and resilient suspension, it is equally apparent that numerous difficulties stand in the way of its adaptation to present types of vehicle. So numerous and conflicting are these difficulties, in fact, as to prove well-nigh discouraging to the designer who attempts to solve the problem at first hand. So that though its use may come about in the course of time, it is to be expected that it will be brought about by gradual degrees rather than at a single stroke of the designer's pencil. Incidentally, the working out of the questions which are involved in the way of under suspending the frame, and reducing the spring mounting to its lowest terms must be of great benefit in the commercial vehicle field where the low loading platform is a desideratum not yet fully appreciated.

Inspect the Mechanical Lubricator.

In the case of a mechanical lubricator which is driven by means of a chain or belt, it should be borne in mind that the mere fact that the driving gear is in motion does not signify that the mechanism within the tank is working properly, nor that the oil is being fed at the proper rate. Sometimes the little set screw holding the driving pulley or sprocket to its shaft backs out sufficiently to permit that member to turn idly upon it. When the slippage is sufficient to permit the pumps to remain at rest, the cessation of the feeds will be observable through the sight feed glasses. When it is only sufficient to decrease the rate of feed without stopping it altogether, however, there is danger of trouble in the bearings. To guard against this difficulty which, though rare, nearly always is at the seat of a very troublesome difficulty, it is well to inspect the driving gear of the lubricator from time to time.

Car for the Traveling Photographer.

Like the war automobile and the house car or motor salon of the supra touring order, various elaborate applications of the motor vehicle to the uses of mankind are from time to time appearing. Quite the latest of these is the photographer's car, which is the invention of a Frankfort-on-Main genius. On a motor chassis of special construction is mounted a roomy closed body containing a dark room fully equipped, together with storage space for a large amount of paraphernalia. Apart from the value of such an arrangement to the traveling portrait artist, it would seem that the war correspondent and news photographer well might utilize the idea to profitable advantage.

Keeping Things on the Move.

"See that window across the street," said the manager of the New York branch of a well known automobile concern, pointing to a rival establishment on the opposite side of Broadway. "For almost three months that identical car has been in that window in exactly the same position, without a change of any kind. Nobody expects to see anything new in there any more. I don't mind telling you that if I cannot get a new model to put in our window every week I nevertheless change about with the cars I have, altering the position in the window each time so that there is an appearance of 'something doing.'"

Many Automobiles Escape Taxation.

With 3,000 automobiles owned and operated in Colorado, and valued at between $3,500,000 and $4,000,000, but 936 have been reported for assessment, with a valuation for assessment purposes of $404,405. The State auditor considers this quite remarkable, in view of the fact that there are more than 2,000 cars in Denver alone. Outside of Denver the number of automobiles owned is estimated to be about 1,500.

Labor of Developing a Color.

Few persons fully realize the vast amount of work required to give a body its completed dress. To obtain the new Pope-Toledo blue finish, for instance, it is stated that no less than 32 painting operations are required. Likewise the time required to season the pigments properly is a factor seldom taken into account, though it totals up very rapidly.

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HEARING ON TIRE CHAIN ORDINANCE

Motorists Present Their Protest to New York City Park Board—Discussion of Legal Points Barred.

Because of apparent lack of organization and slimness of attendance the hearing before the New York City park board on Thursday last, 26th ult., arranged by Charles Thaddeus Terry, counsel for the National Association of Automobile Manufacturers, in behalf of motorists generally, to protest against the recent ordinance passed by the bark board, prohibiting the use of tire chains on any of the roadways under the jurisdiction of the board, left no great impression upon the servants of the city. Aside from being assured that the ordinance would be only enforced on gravel and macadam paved thoroughfares the protestants against the ordinance did not make any great apparent headway. The hearing was held in the Arsenal in Central Park before President Henry Smith, Joseph I. Berry and Michael J. Kennedy of the park board.

Melvin Bender of the New York State Automobile Association was the first speaker. He described the various kinds of non-skid devices as used on automobile wheels and told of their several actions on the surfaces of roads. He brought out the point that while steel studded tires had a tendency to damage a road, tire chains left only their imprint in a road surface, like a matrix in a soft surface. He also touched on the legal aspect of the ordinance, asserting that the park board did not have legal authority to pass and enforce such an ordinance. President Smith replied by stating that before the ordinance had been drawn up, the city's corporation counsel had been consulted, and that the board had been assured by him that they had full power to pass and enforce the ordinance. Mr. Smith also put a damper on some of the other prospective speakers by saying that the legality of the ordinance would not be considered, as that phase of the question must be discussed with the corporation counsel of the City of New York.

That tire chains are the result of ten years of experimental work with various non-skid devices, and are the best for such purpose, was advanced by Hiram Percy Maxim, of the tire committee of the Association of Licensed Automobile Manufacturers. Although he is a lawyer, Charles Thaddeus Terry, did not consider the legality of the ordinance, due probably to President Smith's earlier admonition that an argument on that score would not be listened to. Mr. Terry therefore said that as automobiles are constantly multiplying in number, that roads must be adapted to their use, and that if greasy roads were dangerous, they should not be made more so by an action of the park board in enforcing an ordinance that prohibits making them as safe as possible by stopping the imperative use of non-skid devices of some sort.

The general tenor of W. W. Niles's remarks was much the same as the preceding speaker, and A. R. Shattuck, former president of the Automobile Club of America, suggested that the park board prohibit the use of tire chains only in dry weather, but allow them to be used in rainy or snowy weather.

Russell A. Field, secretary of the Long Island Automobile Club, said that the members of the Brooklyn organization were of the opinion that the ordinance had been passed under a misapprehension as to the real effects of the various kinds of non-skid devices, and that if the members of the park board could find time to make some personal experiments, the edict against tire chains would be removed, he thought. The hearing was adjourned after Messrs. Bender and Terry submitted briefs.

The hearing was arranged after a protest from metropolitan automobilists generally following the enforcement of the ordinance prohibiting tire chains on any of the roadways under the jurisdiction of the park board. The precise text of the ordinance follows:

"No automobile or horseless or other vehicle wearing chains over the tires of their wheels shall enter the public parks or the traffic roads under the jurisdiction of the Board of Parks without permission of the commissioners having jurisdiction. This rule and regulation shall take effect December 16, 1907."

It is a question whether the park board had a right to pass the ordinance in opposition to the provisions of the State law regulating the use of motor vehicles, which was passed in 1904. Local ordinances are prohibited as set forth in Section 4, subdivision 3, which reads:

"Subject to the provisions of this act local authorities shall have no authority to pass, enforce or maintain any ordinance, rule or regulation requiring any owner or operator of a motor vehicle any license or permit to use the public highways or excluding or prohibiting any motor vehicle whose owner has complied with section 2 of this act from the free use of such highways except such driveway, speedway or road as has been or may be expressly set apart by law for the exclusive use of horses and light carriages."

But the right of the park board to pass the ordinance is a question that will have to be argued or fought out in the courts. The point at moment is that apparently nothing was gained at the hearing last Thursday as the park board refused to listen to anything that would tend to suggest that it acted outside its rights in passing the ordinance.

"NATIONAL" AND "INTERNATIONAL"

Official Definition of the Terms as Applied to Racing—How the Promoter Can Secure a Sanction.

"A national race is a race where the entrants are respectively named by and represent any two or more of the automobile clubs affiliated with the American Automobile Association."

Therefore should Willie Jones of the Hohokus (N. J.) Automobile Club, and Tommy Brown of the Automobile Club of Bingville (N. Y.) wish to conduct what would be known and recognized as a "national race," under the American Automobile Association's definition, all they will have to do is to select a name for it, secure a sanction upon recommendation of their clubs, providing those clubs are affiliated with the governing body. Of course, it is not quite as bad as that, but according to the resolution as adopted at the meeting of the executive committee of the racing board of the American Automobile Association, in New York City, Saturday last, 28th inst., any one can promote a "national race" if the entrants are nominated by two or more clubs, no matter how obscure they may be, conditional only on the fact that they are affiliated with the American Automobile Association. On the face of it the resolution, while probably designed to correct an evil, smacks of the ridiculous.

The other resolution passed at the same time was a definition of an "international race." It says that "an international race is a race where the entrants are respectively named by and represent any two or more of the recognized national affiliated automobile clubs of the world."

The meeting, which was presided over by Frank G. Webb, in the absence of Chairman Jefferson De Mont Thompson, who took a day off to get married, did not transact any other business except the granting of several sanctions, among them one to "Robert Lee Morrell, chairman, First road race for Briarcliffe trophy, Westchester county, New York, on April 24th, 1908."

This is popularly supposed to be the stock car race "for sweet charity'$ sake" which originally was undertaken by Mr. Thomas Francis Moore's "exclusive" but suspiciously subdued Metropolitan Automobile Association, and more recently by somebody's "Automobile Manufacturers' Committee" by whom Moore is now employed "accelerating public sentiment" and convincing the thousand and one manufacturers—not to mention importers—who know nothing of the "committee," that if they do not have a road race for stock cars in April next, their business will simply go to the bowwows. Moore is making a manful effort to "make good," although Sweet

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Charity has been slapped on the wrist and the "surplus receipts"—good old Surplus Receipts!—are to be "turned over to the county for the benefits of the taxpayers"—happy, happy taxpayers! The Morrell-Moore "manufacturers' committee" now has a map of the course, Mr. Morrell has a sanction and Mr. Moore sends word that he has three real entries. There are said to be two importers and one American manufacturer on the mysterious committee.

The other sanctions granted by the A. A. A. were issued to the Automobile Club of America, for the Florida carnival beginning March 2d, and to the Savannah Automobile Club for its series of stock car road races to be held during the week beginning March 15th.

The resolutions previously referred to and which are to be incorporated in the racing rules, were introduced by Dave Hennen Morris, and seconded by Robert Lincoln Lippitt.

Why New York Has Many Poor Roads.

Every citizen of the State of New York is so used to feeling proud and asserting that his State is the wealthiest State in the Union, that to him the facts in regard to the condition of the highways of the State will seem strange. The 933 towns in the State into which the counties are divided, are charged by statute with the care and maintenance of the highways and bridges existing in each town. The total mileage of highways cared for under this statute is 74,000 miles. The average tax levy in each town for the entire State is $44 per mile. The total highway tax levy in money and labor is $3,284,000, a very large sum of money, until one realizes that this money is only to care for the highways between the melting of snow in the spring and its return in the fall, and that $44 a mile means that each highway commissioner has eight miles with which to care for and maintain each foot of highway in the town during the season. With this money he must grade it, turnpike it, put on permanent material, build sluices under five feet, remove the loose stone, and keep it smoothed from ruts. It is every evident that both under the labor system and the money system alike, no permanent improvement can be made in the highways of the State except in the very rich towns, unless the highway system is changed.

Organized to Promote Touring.

To promote touring among members of their own set several socially prominent young New Yorkers have formed the Motor Car Touring Society of the City of New York, a certificate of incorporation having been filed with the Secretary of State. Albert Eugene Gallatin is named as president; Percy R. Pyne, 2d, as vice-president, and Orme Wilson, Jr., secretary-treasurer. These with Stuyvesant Fish, Jr., and Marshall R. Kernochan constitute the incorporators.

THIRTY-ONE WERE PENALIZED

Only Eight Contestants in Quaker City Endurance Run Made Perfect Scores—Bad Roads Partly to Blame.

Eight perfect scores out of thirty-nine starters in the two main classes tell the story of the wholsale elimination of possible clean records in the second annual endurance contest of the Quaker City Motor Club in its run from Philadelphia to Allentown, Pa., yesterday, New Year's Day. To the unfavorable condition of the roads on the second control of the run was due the many black marks.

Starting in the morning with every indication of an uneventful and parlor-car trip, the run proved to be one of the most strenuous and exacting ever arranged by the energetic Quaker City organization. With a twenty miles an hour schedule that was easy as far as Doylestown, the contestants followed a trail of confetti over a system of highways that are a standing disgrace to the State. Coupled with the necessity of careful and slow operation came that constant bugbear—tire trouble. The unresisting frozen mud crust that held what seemed to be an unusually large crop of nails, served to flatten many a good full blown tire, and played havoc with scores of the unfortunates. When the committee ceased its arduous labors at Allentown late in the evening, but six cars remained as perfect bidders for the MacDonald and Campbell trophy.

The six drivers in the touring class that finished the first day with perfect scores are C. W. Hoffman, Stearns; T. W. Berger, Oldsmobile; Frank Yerger, Studebaker; Robert Shirk, Stoddard-Dayton; Hal K. Sheridan, White; and Frank Leflen, Garford. Owing to the failure of several checkers to turn in cards the results of several other cars have not been computed.

Two drivers survived in the division for high powered runabouts—J. Trumbull, Packard, and Samuel Collum, Stearns. In Class C, for small runabouts, which check in only at morning and night, no results have been announced, and in Class D, the go-as-you-please division, which do not report to checkers, the winner will be decided after the finish to-day by a vote for the most popular driver in that section of the endurance brigade.

That the test on Wednesday was a truly hard one is agreed to by all those who participated in it. The bad roads on the latter part of the journey were responsible for many late arrivals and consequent loss of points. There was but one accident and that proved not serious. While trying to make up schedule time H. P. Fry pushed his Columbia car to the limit. Three bad water-breaks did the rest, and Hugh Coyle, the mechanic, was bounced out of the seat. He landed on the hard ground face first, and was rendered unconscious for twenty minutes. Although shaken up quite badly and with his face cut and bruised, Coyle announced his determination to return with the car to Philadelphia. William Cathcart's Corbin sideswiped a bridge and broke its mudguards, but that was all, though quite sufficient to make Cathcart "bless" the roads that caused him to lose points.

The worst roads were met with between Doylestown and Ottville, a section included in the second control. Bad at all seasons it was at its worst on Wednesday, and there were plenty of perfect scores lost simply because the drivers could not go any faster than ten miles over the deep frozen ruts that prevailed. With the exception of a few miles between Easton and Nazareth, where the road was soft and deep, the course was good, but these two instances of miserable highways more than offset the good ones.

To-day's run from Allentown back to Philadelphia will conclude the contest. The drivers are apprehensive on account of reports of unusually bad roads, especially in the vicinity of Kutztown. The route takes the contestants through Reading, Pottstown and Norristown, a distance of 93.7 miles. This with the distance of the first day's run—78.9 miles—will make a total of 172.6 miles.

According to the report given out last night this is the way the cars survived the first day's run:

Class A (touring cars)—O. W. Hoffman, Stearns, perfect; T. W. Berger, Oldsmobile, perfect; Frank Yerger, Studebaker, perfect; Robert Shirk, Stoddard-Dayton, perfect; Hal K. Sheridan, White, perfect; Frank Leflen, Garford, perfect; P. B. Huyette, Peerless, 1 point; Harry Michenor, Lozier, 2 points; J. P. MacNichol, Matheson, 3 points; H. F. Fry, Columbia, 4 points; A. J. King, Studebaker, 4 points; H. B. Shade, Pullman, 7 points; H. B. Hill, Royal Tourist, 8 points; C. E. Titman, Matheson, 8 points; Bert Maucher, Peerless, 10 points; William Crawford, Franklin, 11 points; A. J. Martin, American Mors, 15 points; Robert Autschenfelter, Autocar, 18 points; Webb Jay, Kisselkar, 25 points; J. A. Moran, Stevens-Duryea, 23 points; W. Cathcart, Corbin, 39 points; C. A. Percival, American, 68 points. The following drivers had not handed in cards: H. K. Knepper, Frayer-Miller; Maylin Leinau, Acme; N. J. Fox, Locomobile; H. W. Greenwalt, Mitchell, and J. W. Florida, Locomobile.

Class B (high-powered roadsters)—J. Trumbull, Packard, perfect; S. H. Collum, Stearns, perfect; Robert Morton, Pullman, 3 points; E. T. Youse, Thomas, 5 points; Stewart LaFear, Pullman, 7 points; A. A. Jones, Ford, 11 points; P. E. Varney, Oldsmobile, 75 points. The following drivers had not handed in cards: Robert Maynes, Autocar; Thomas Wilkinson, Packard; Willian Henry, Ford; J. W. Parkin, Jr., Packard, and William Haupt, Columbia.

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SHOWING A CUSTOMER HIS NEEDS

Getting Back at Him with His Own Specifications—An Illustration of Fine Art in Selling.

There are many kinks in the slender thread which the salesman must follow in order to secure his orders, but few which cannot be unraveled by close familiarity with the workings of the human mind and that peculiar constructive faculty of argument which enables the successful merchant to offer the customer a fabric of reason exactly suited to his comprehension and tastes. The man who adds psychology to his selling equipment and uses it judiciously in displaying his technical and worldly wisdom, is he who not simply takes orders, but delivers the goods on the one hand, and the cash on the other. A striking case in point is related by A. J. Banta, who frequently has occasion to exercise this trait in the management of the Chicago Branch of the Locomobile Co., of which he is in charge.

Not long since, Banta had occasion to take on a new salesman, and for the purpose chose a man of considerable business experience and evident stability, who had at one time been possessed of means and was supposedly thoroughly conversant with the type of man with whom he would have to deal in connection with the Locombile business. After this man had been at work several days he interviewed him in an effort to discover how he was getting on. It appeared that in one particular instance, he had called upon a well known architect several times, had been well received, and had never failed to obtain a hearing, but had come away each time without arriving at any definite conclusion.

"Does he really want to buy a car?" asked Banta.

"Why, yes."

"Does he know what kind of a car he wants?"

"Yes, in a general way."

"Have you discussed the horsepower with him, the color and equipment, and fittings, definitely enough so that you know his tastes pretty well and understand about what his idea of a car would look like?"

"Yes, I think so"—and he proceeded to run over the matters which they had considered.

The upshot of it was that in the afternoon the salesman called on the architect and presented him with a regular contract form for the delivery of a car, with every detail closely specified. Under instructions from his chief, he merely laid the form on the customer's desk and asked him to look it over and sign, after making any alterations he saw fit.

At the end of five minutes the contract was signed and delivered over to the elated salesman, and then the architect swung about in his chair and said: "There, now you have given me something to work on and put it in a way that I can grasp. You see a man in my profession is accustomed to seeing things in black and white. My mind is filled with a hundred and one things and it is next to impossible for me to carry all the details of anything clearly in my mind. Here, you give me my ideas in the form in which I am accustomed to deal with them. I know what I want and what I don't want, but I have neither the time nor the energy to summon those ideas and give them to you in so many words. I don't pretend to say you might have closed with me at once if you had brought this to me in the beginning, but I do say you would have stood but a small chance if you had kept on trying to make me remember and tell you what I wanted and how I wanted it fixed."

Alcohol as Fuel for Heavy Trucks.

By raising the compression of the motor from 78 pounds to 112 pounds, and putting a hot water packet around the intake manifold, the Hewitt Motor Co. has adapted one of its five ton gasolene trucks for use with alcohol. A demonstration of a truck so fitted was given last Saturday from the company's salesrooms on East Thirty-first street, New York. The vehicle was equipped with a regular gasolene carburetter, and beyond fitting the latter with an intake arranged to heat the air as it enters there was no special preparation other than the changes mentioned. The motor compression was raised by using longer pistons with dome shaped heads.

The truck for its alcohol demonstration bore a flat body on which was placed a row of boxes fitted with seat cushions for the benefit of those wishing to ride along with it. About 1,000 pounds of sand in bags was carried. The first day's run demonstrated the flexibility of the motor with alcohol fuel, while tests were conducted a few days later with a full five ton load to show that the change in fuel does not lessen the capacity of the truck. The motor is rated at 32 horsepower and has four cylinders, 4¼ by 5½ inches. It starts cold on denaturized alcohol, with Simms-Bosch ignition.

The flexibility was proved by the fact that the motor could be run fast or slow quite as easily as with gasolene. The truck was driven through city traffic with no more numerous changes of gear than with gasolene, and as far as could be observed, there was no practical difference in the use of the two fuels. The exhaust with the alcohol was colorless, but very pungent, if not stimulating. Beyond the fact that the vehicle bore a cloth sign proclaiming it as a "5 ton alcohol truck," the passerby could not distinguish it from a regular gasolene truck, which it was except in the matter of the slight alterations noted.

INDICATING SPEED BY COLORS

Unique Foreign Device to Aid in the Prevention of Scorching—Features of Its Mechanism.

It is several years since the proposal to regulate the speed of motor vehicles by means of indicators more or less under the jurisdiction of governmental authorities was first heard abroad. A system invented on German soil was then described as showing the speed at which any vehicle was traveling by means of colored discs visible for some little distance in front of and behind it. That this idea is still extant is shown by a recent report from American Consul H. Albert Johnson, of Liege, who describes the difficulties encountered by the police in obtaining evidence of violations of the speed law and outlines the method by which it is hoped to overcome them.

"The demand for a reliable and accurate speed register has been met by a Belgian inventor, who has devised an apparatus which, in the experimental trials now taking place gives entire satisfaction," he says. "This apparatus consists of a box placed in the forward part of the vehicle, directly in view of the chauffeur, and containing certain machinery that is connected to the axle by a flexible rod that transmits each revolution of the wheel to the registering apparatus. The mechanism is arranged to mark three different rates of speed; that is, 15, 30, and 60 kilometers (9.32, 18.63, and 37.26 miles) per hour, indicated respectively by a white, red and blue disc. Thus when the car is running in a town where the speed limit does not exceed 10 kilometers, the white disc is the one that should be visible; if running in the country, where the speed limit is 30 or 60 kilometers, then either the red or blue disc should be seen. In this manner the moment a car is near enough to permit of the disc being seen the rate of speed is known.

"If so desired the car can be stopped and the rate of speed, as indicated by the disc, can be verified by an examination of the register, which is arranged to indicate by means of an endless revolving ribbon connected with the mechanism, the exact rate of speed. This perforated band or ribbon may be demanded by the controlling authorities as often as may be deemed advisable, say once every month, and all indications of having exceeded the speed limit, which the ribbon would have registered could be noted.

"Of course the box containing the registering mechanism would be closed and sealed in such a manner that neither the chauffeur nor the owner of the car could open it nor take out the registering ribbon without the intervention of the authorities having control of such matters."

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SEVERE SENTENCE FOR A MOTORIST

Why His Plea of Guilty Failed to Save Him from Imprisonment—He is Heavily Fined as Well.

A jail sentence of three months at labor in addition to a fine of $1,000 was meted out to George Meserve Weatherbee, of 26 Chester avenue, Waltham, Mass., 26th inst. Weatherbee, who is a member of the firm of Weatherbee & Smith, automobile dealers of Boston, pleaded guilty to running down with his automobile and causing the death of Warren F. Batchelder, of Cambridge, on the night of May 5th, at the corner of Western and Putnam avenues, Cambridge. The sentence is, so far as known, the heaviest ever inflicted in Massachusetts for an offense of the kind.

When the case first came up in the last term of court Weatherbee pleaded guilty to a charge of manslaughter, but sentence was suspended until the present term of court, the dealer in the meantime being held under $10,000 bonds. When the case came up last Thursday, Captain Hurley, of the Cambridge police force, made a statement of the facts in the case. He told how Batchelder left a street car on the morning of September 6th, and of his being struck by Weatherbee's automobile. He said that Weatherbee never slackened his speed, but hurried away from the scene of accident, without attempting to find out if the man he struck was seriously hurt. Weatherbee later was discovered by Hurley's lieutenants, after the automobile had been found in a Newton stable. The arrest was made at the garage run by Weatherbee in Boston.

District Attorney Arnold Scott, for the State, made an address, citing the circumstances, and asked Judge Hardy to impose a sentence of three months in the house of correction in addition to a fine of $1,000. Attorney Proctor pleaded that only a fine of $1,000 be imposed. Judge Hardy, however, considered that the request of the district attorney was very moderate. He said that if it had not been for the energies of the police Weatherbee would still be at large; that it was through no desire on the part of the prisoner that he was before the bar. The court continued that the prisoner evidently had not stopped to see how severely he had injured the man, or to offer any aid, but that his one object seemed to be to get away from the scene of the accident. Following which remarks he imposed a sentence of three months in the house of correction and a fine of $1,000.

Weatherbee bore up well under the ordeal and after paying the fine walked with a court officer across to the jail. He has a wife and three children, the youngest only about one month old. After being locked up in the receiving cell Weatherbee was given a suit of the regulation attire. The Boston dealer will have to work in the machine shop of the institution for the next three months, and will be accorded no privileges not allowed other prisoners, who have to arise at 6 a. m., make their beds, wash the cell and put everything to order, and after breakfast of bread and coffee at 7 o'clock, work until noon. Dinner consists of soup and bread. After dinner Weatherbee will have to work until dark, when he will receive a supper of tea and bread. The only food delicacies that he can have sent to him from the outside world are fruits. After supper he may read or take other recraetion in his cell until 8 p. m., when the lights are put out.

Bay State Law Makers Busy Again.

Promptly on the first day of the new year the Massachusetts legislature entered upon its annual task of grinding out new laws and putting a fresh edge on old ones. The job usually eats up about half of the year, leaving the other half for political campaigning. Consequently, Massachusetts has more law to the square inch than any other State in the Union.

Of course the automobile, with its owner and its driver, shares the attention of the ambitious city lawyers and the bucolic wiseacres who constitute the largest elements in the composition of "the Great and General Court." There will be no exception in this respect this year. Suggestions for automobile legislation are promised from various sources. One of the most noteworthy will be in the form of a measure that has been in process of incubation in the Safe Roads Automobile Association, in which Colonel William D. Sohier is the leading spirit. It is intimated that this association will ask for a provision of law under which a court may, at its discretion, impose the penalty of imprisonment in cases of flagrant violation of the requirement concerning the display of number plates.

Chicago Show "Bouncers" Fined.

An echo of the Chicago show was heard in the Harrison street court, that city, last week when Judge Newcomer fined four men, employed at the show, for forcibly ejecting Elton Lower, a prominent Chicagoan, after he had paid his admission. Lower testified that he had paid admission for himself and his wife and had left the main building to visit the exhibits in the annex. When he attempted to return to the main building, he declared, he was stopped by one "Sig" Hart, who called Alfred Beaumont, in charge of the ticket takers. Beaumont, it is stated, ordered Hart, Henry Barstow and Jacob Bunge to eject Lower from the building, which they proceeded to do in no gentle manner. Lower had the four arrested on an assault and battery charge and Beaumont was fined $50, Hart and Barstow $5 each, and Bunge $1, the latter not having taken such a strenuous part in the proceedings.

DANGEROUS JERSEY ROADS MARKED

What is Done with Part of the Money Exacted from Motorists—Sign Boards to Promote Safety.

At least some of the money New Jersey takes from the motorist in the form of license fees is devoted in part to the promotion of his safety on the roads in that State. "Go Slow," is big letters on a black signboard placed at the right hand side of the road is the warning that greets him wherever danger lurks. During the past year $4,000 of the income derived from license fees has been expended in placing such signs at places that were considered perilous. An unusual number of them are to be seen in the southern portion of the State near the seashore resorts.

Wherever a bad stretch of roadbed exists, wherever there is an especially sharp turn, wherever some hidden bridge, uncertain passage through a woods, or anything that would endanger the motorist in the least there a signboard has been erected.

The boards have been put at such an elevation and at such a distance from the danger spot that they are visible a long distance away, and the motorist running at top speed is given time to slow down before he reaches the section of the road where danger exists.

Nearly all of the railroad grade crossings have also been protected in a similar manner, but here a larger sign with the warning "Railroad Grade Crossing—Listen" is placed. The many crossings in South Jersey and in the northern part of the State as well are now guarded in this manner, and where the crossing is considered more than ordinarily dangerous the "Go Slow" sign has also been added. The work is to be continued and will extend more largely toward the northern and eastern portions of the State than it has thus far extended.

Toledo Organizes Its First Club.

Although Toledo, Ohio, has a population of about 150,000, strange to relate, until within a week ago it could not boast of an automobile club. Several automobile owners got together, formed an organization committee, resulting in the formation last week of the Automobile Club of Toledo, with 125 charter members. The club will pay particular attention to the subject of good roads, and announces that it will assist the authorities in enforcing laws governing the use of motor vehicles. The officers elected are: President, E. D. Libbey; vice-president, E. J. Marshall; treasurer, J. M. Steenberg; secretary, George S. Mills; governors, the officers, Marshall Sheppey, W. W. Morrison, John Mockett, J. J. Manning and F. M. Brigham.

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The Week's Patents.

866,238. Power Transmission Coupling Device. Antonio M. Van Halen, Madrid, Spain. Filed June 3, 1907. Serial No. 377,003.

1. In combination, a driving shaft, a sleeve surrounding said shaft and provided with a non-rotatively and slidably mounted flanged collar, means for shifting said collar, a pulley loosely mounted on said shaft and provided with a band receiving recess, a coupling band for said recess, an arm rigidly mounted on said shaft, means connecting said arm with one end of said band, a crank shaft mounted in said arm and connected with the other end of said band, an actuating member carried by said arm and traveling freely between the flanges of said collar, and a threaded connection between said actuating member and said crank shaft.

866,241. Ignition System for Explosion Engines. Richard Varley, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Nov. 13, 1906. Serial No. 343,179.

1. A means for starting explosion engines with an electrical ignition system, comprising an auxiliary generator having a foot pedal, and means whereby said generator is automatically cut into the ignition circuit when said pedal is depressed.

866,254. Change Speed Lever for Automobiles. Charles W. Berry, Portland, Me. Filed Jan. 2, 1907. Serial No. 350,342.

1. The combination with a change gear lever, notched segment and pawl for motor cars of an auxiliary lifter for disengaging the pawl, an operating handle for actuating said lifter and means for tripping said lifter between the notches.

866,282. Shifting and Locking Mechanism for Friction Band Clutches. James P. Karr and John D. Rauch, Loganspoit, Ind. Filed Feb. 12,1907. Serial No 357,014.

1. The combination with a rotatable shaft, a driving gear keyed thereon and a drum loose thereon and provided with a peripheral friction surface, of a friction band applied to said surface, pins passing through the peripheral portion of the gear and provided with cranks one of the pins being connected with both ends of the divided band, single and double cranks applied to the pins on the outer side of the gear, an equalizing bar connecting the single crank with the double one, a yoke which is slidable on the hub of the gear, toggle links and pivoted knuckles connecting the yoke with the cranks of the two pins, and a shifter for moving the yoke in and out for applying the band and locking the same automatically as shown and described.

866,294. Motor Vehicle. William J. Miller, Columbus, Ohio, assignor to The Oscar Lear Automobile Company, Columbus, Ohio, a Corporation of Ohio. Filed Jan. 23, 1907. Serial No. 353,729.

1. A motor vehicle comprising an under frame construction, a cab body mounted thereon, a rearward extension upon said cab body, a platform at the upper side thereof, an elevated seat supported on said platform, means within easy reach of said seat for controlling the operative parts and the brakes on said vehicle, the connections between said means and said under frame construction for controlling said operative parts being housed within said extension.

866,488. Variable Speed Gearing. James G. Lambert, Hadleigh, and Benjamin E. Waddams, Ealing, England. Filed March 9, 1907. Serial No. 361,469.

1. In a variable speed gearing, the combination with the driving and driven shafts, of a worm mounted loosely on the driven shaft, a clutch for coupling said wheel to said shaft, a plurality of worms of the same diameter and normal pitch but each having a different number of threads, the said worms being all mounted on a sleeve free to slide on but rotate with the driving shaft, means for locking said sleeve in the several positions to retain the worms in their operative positions, and means for disengaging the clutch, as set forth.

866,537. Pneumatic Spoke Wheel. Arthur H. Thibault, Valparaiso, Ind. Filed Oct. 13, 1905. Serial No. 282,606.

1. A wheel comprising a sectional rim the outward movement of which is confined within the maximum normal circumference of the wheel, and pneumatically cushioned spokes each consisting of telescopic members and a packing interposed between the head of the inner member and the closed end of the outer member.

866,539. Repair Device for Pneumatic Tires. Philip C. Travers, New York, N. Y., assignor to Michael P. McNamara, New York, N. Y. Filed July 26, 1906. Serial No. 327,929.

1. A protecting device for the inner tube of a pneumatic tire comprising a relatively rigid body member having a flange on that edge thereof contiguous to the heel of the tire casing for engagement with said heel and having the other edges of said body member curved outwardly for engagement with the inside of said tire casing and for protecting the inner tube against abrasion by said edges.

866,540. Vehicle Wheel. Horace Villiers-Stuart, Louisville, Ky. Filed Dec. 10, 1906. Serial No. 347,147.

1. In a wheel, the combination of radially movable tire-segments, connections whereby the radial displacement of one segment is similarly transmitted to all of the other

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segments, and cushioning devices for automatically returning the segments to normal position.

866,631. Sparking Plug for Explosive Engines. William Diebel, Philadelphia, Pa. Filed July 13, 1906. Serial No. 326,010.

In combination, a body having a threaded upper end, the threaded lower portion having a small opening therein, a sparking point extending inwardly from the wall of the lower opening, a shoulder in the body, a heat insulating washer resting on the shoulder, a porcelain insulator fitting to the bore of the body and resting on the washer, said washer and porcelain insulator having coinciding apertures, and said insulation terminating at the washer, a conductor extending through the aperture of the insulator and washer having a sparking point terminating near the sparking point in the wall of the body and a threaded collar in the body to bear on the porcelain insulator.

866,693. Rotary Explosion Engine. John F. Southern Wilmington, Del., and Henry J. Griest, Chester, Pa.; said Southern assignor to said Griest. Filed April 27, 1904. Serial No. 205,111.

1. In a rotary explosion engine, a revolving piston, an annular cylinder in which the piston revolves, a piston carrier concentric with the annular cylinder and with a semicircular concave cross section, intersecting the annular cylinder and fitting the concavity of the piston holder, and an opening in the abutment to permit the passage of the piston, substantially as shown and described.

866,976. Rocker Bar Gear for Vehicles. George W. Stevenson, Reading, Pa., assignor of one-half to Milton H. Schnader, Lebanon, Pa. Filed Sept. 26, 1906. Serial No. 336,250.

1. In a vehicle, a resilient support for the frame of the body thereof consisting of a rocking bar which is interposed between said frame and the axle of the vehicle and resting upon the latter and endwise compressible springs bearing against the opposite ends of said bars in reverse direction.

866,980. Chain. Arthur B. Taylor, Indianapolis, Ind. Filed June 28, 1905. Serial No. 267,379.

1. A chain composed of a plurality of successive pairs of links, the inner link of a pair comprising two cross bars and an intermediate connecting member, and the outer link of a pair comprising two cross bars each passing through an inner link between the two cross bars thereof, and also comprising a pair of side bars which connect and are permanently secured to the cross bars of said outer links, the adjacent faces of each pair of cross bars being formed to co-operate with a transversely removable intermediate compression member, said transversely removable compression member being at all times accessible at one end without dismembering the links.

866,986. Wheel Rim. John K. Turton, New York, N. Y. Filed Sept. 22, 1906. Serial No. 335,706.

1. In a wheel, the combination of a felly, a rim extending around the same, a tire extending around the rim, said rim being expansible and contractible, and means permanently carried by the rim and operating on both sides of the rim simultaneously for effecting the expansion and contraction of the rim, substantially as described.

867,057. Vehicle Brake. John M. Lansden, Jr., Orange, N. J. Filed Oct. 14, 1904. Serial No. 228,418.

1. The combination with an axle having a squared portion, brake blocks engaging therewith, means for elastically engaging and for separating the brake blocks, the said brake blocks having an opening of hexagonal shape through which the axle passes, whereby the brake will be self-centering.

867,075. Internal Combustion Engine. Otakar Podhajsky, Warren, Pa. Filed Nov. 27, 1906. Serial No. 345,287.

1. In an internal combustion engine, a cylinder, and a removable cylinder head of substantially cylindrical form whose diameter is equal or greater than that of the cylinder bore, the outer surface of the cylinder head being provided with a plurality of shoulders fitting against similar shoulders on the cylinder bore; one of the valves controlling the cylinder being provided with a passage controlled by said valve and registering with a passage in the cylinder bore, substantially as described.

867,122. Gas Engine Starter. Raleigh W. Godfrey, Elyria, Ohio, assignor of one-half to H. F. Thompson, Lexington, Ohio. Filed March 23, 1906. Serial No. 307,603.

1. A gas engine starter having a tubular pump barrel, a liquid receptacle mounted on said barrel and having an orifice opening into said barrel, a plunger in said barrel adapted to traverse said orifice and a heating pan on the bottom of said barrel beneath said receptacle.

867,211. Circuit Making and Breaking Device. Andrew L. Riker, Bridgeport, Conn., assignor to The Locomobile Company of America, New York, N. Y., a Corporation of West Virginia. Filed Jan. 18, 1904. Serial No. 189,421.

1. A circuit making and breaking device provided with a contact member and impact means for enforcing the making of the circuit.

867,207. Fly Wheel Construction for Gas Engines. Archibald J. McCollum, Chicago, Ill., assignor to Armac Motor Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 21, 1906. Serial No. 348,855.

1. A fly wheel, said wheel being constructed of two discs each of which has an annular rib at its periphery, an outwardly extending boss located on each of said discs, there being a taper socket is said bosses, an outwardly extending hub at the center of each of said discs, a rod mounted in each of said hubs whose external diameters are coincident with the external diameters of the hubs, each rod having means for securing and holding it in position, and a steel sleeve fitted over each rod and the exterior surface of the adjacent hub, for the purpose set forth substantially as described.

867,271. Automobile Heating Appliance. Paul P. Hofmann, Chicago, Ill. Filed Dec. 15, 1905. Serial No. 291,854.

1. In combination with an automobile comprising a body, an engine, a part through which the engine exhausts, heated by such exhaust and located at a level below the body, a jacket arranged to conduct air into such proximity to the exhaust heated part as to be heated thereby, a flue leading upward from said jacket into the body, said jacket and flue forming an air passage, and one of said parts being provided with an air escape opening to a point without the body; and means operable from within the body for regulating the passage of air through said flue and said escape opening.

867,279. Explosive Engine. Martin C. Kessler, Denver, Colo., assignor to The Kessler Motor Company, Denver, Colo. Filed Sept. 17, 1906. Serial No. 334,926.

1. In an engine in which air is compressed in the crank case, means for controlling and varying the volume of air delivered from the crank case to the engine cylinder with each alternate revolution of the crank shaft.

867,282. Steering Gear for Automobiles. Walter W. Macfarren, Pittsburg, Pa., assignor to Wm. H. Donner, Pittsburg, Pa. Filed March 9, 1907. Serial No. 361,623.

1. In a motor vehicle, the combination of four wheels, a fluid pressure supply, and means for steering either the front or rear wheels independently or simultaneously by the application of said fluid pressure.

867,285. Automobile Sleigh. William C. Mielke, Parkers Prairie, Minn. Filed April 16, 1906. Serial No.

1. In a device of the class described, a body, a rear sled secured to the said body, a forward sled formed of a frame slidingly mounted relative to the said body, and provided with runners means for forcing the forward sled forwardly, and the body and rear sled forwardly while the forward sled is retained at its forward limit of movement a steering segment secured to the forward sled, and means for operating said segment.

867,324. Power Transmission Device. Edward P. Warner, Chicago, Ill., assignor, by mesne assignments, to Warner Clutch Company, a Corporation of Illinois. Filed Aug. 15, 1906. Serial No. 330,730.

1. A power transmission device comprising a power shaft; a driven shaft; a friction member connected to said driven shaft and means having a longitudinal reciprocal movement independent of said driving and driven members whereby it is adapted to engage said friction member commencing at one end of the same and advancing to the other end thereof.

867,419. Turbine Adapted for the Use of Combustible Gases at very High Temperatures. Charles Rollin, Newcastle-upon-Tyne, England. Filed Jan. 16, 1907. Serial No. 352,612.

1. In gas turbines used for producing motion from the combustion of gas and air, the combination of an outer revolving structure or "rotor," consisting of refractory material, with an outer metallic casing, and an inner stationary structure or "stator" formed of refractory material.

867,551. Universal Joint Casing. Fred H. Bogart, Hartford, Conn., assignor to Hartford Automobile Parts Co., Hartford, Conn. Filed Oct. 15, 1906. Serial No. 338,886.

1. In a universal joint casing of the class described, an inclosing casing therefor comprising elements adapted to be secured to the bearing pieces of the joint, and having openings therethrough, there being cylindrically shaped surfaces at opposite sides of the same and located in planes at right angles to each other; said surfaces surrounding the openings thereof, and closure pieces also having cylindrically shaped surfaces and engaging the first mentioned cylindrically shaped surfaces, said closure pieces being detachably secured to the driving parts of the joint.

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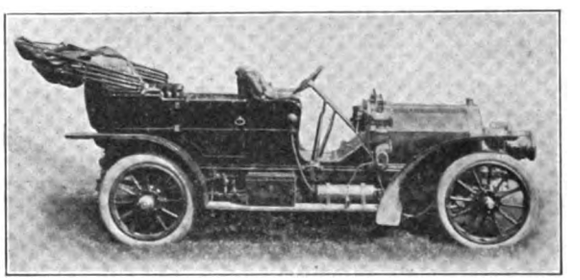
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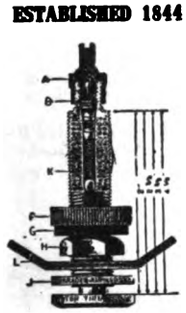
Los Angeles, Cal.—Greer-Robbins Company, 1501-1505 South Main St.
San Francisco, Cal.—City Hall Automobile Company, 66 Fulton St.
Boston, Mass.—Frederick E. Randall Company, 245 Columbus Ave.
Chicago, Ill.—B. C. Hamilton, 1218-1220 Michigan Ave.
Providence, R. I.—Pennsylvania Motor Car Agency, 133 Washington St.
Denver, Col.—Denver Omnibus & Cab Company.
Kansas City, Mo.—Auto-Motor Company, 1122-1124 East 15th St.
Pittsburg, Pa.—Bellefield Motor Company, 4514-16-18 Henry St.
Brooklyn, N. Y.—Charles F. Batt, 1378 Bedford Ave.
New York City—Archer & Company, 1597 Broadway.
Spokane, Wash.—Dulmage-Rose Automobile Company, 1212 Second Ave.
Philadelphia, Pa.—West-Stillman Motor Car Company, 153 No. Broad St.
Baltimore, Md.—Rice's Garage, North & Madison Aves.
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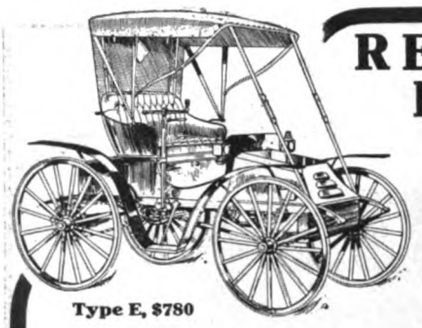
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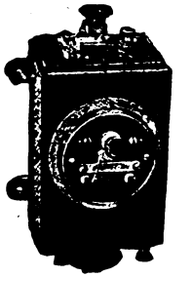
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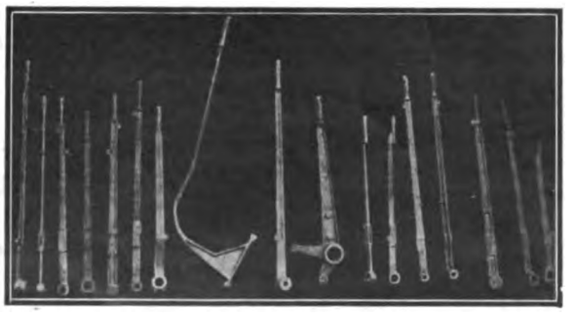
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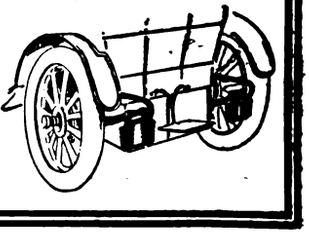


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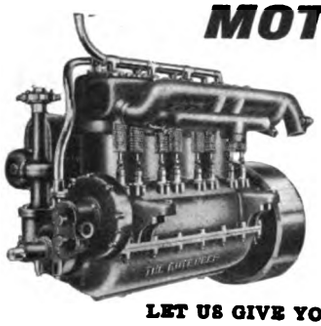
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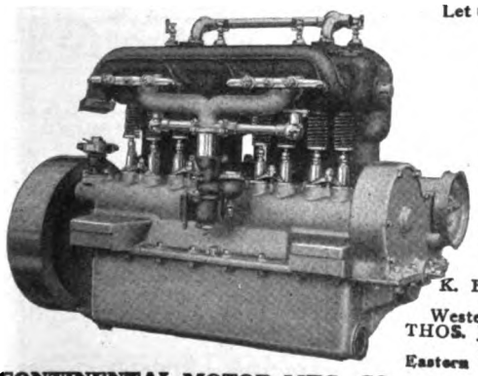
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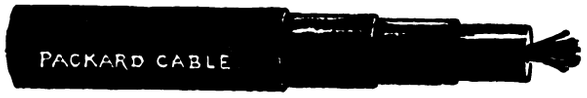
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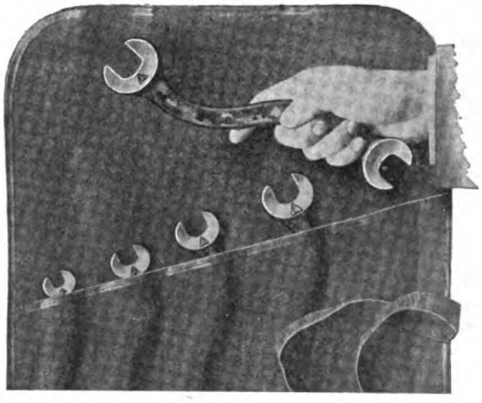
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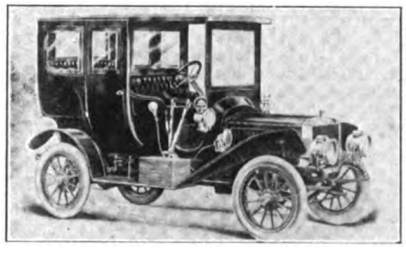
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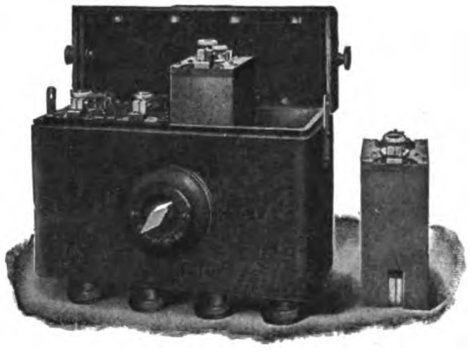


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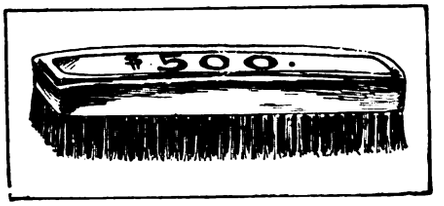
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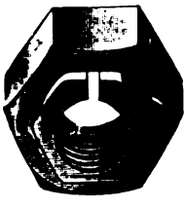


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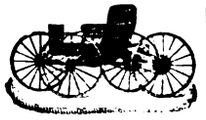
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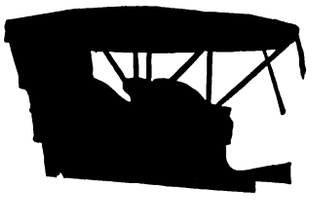
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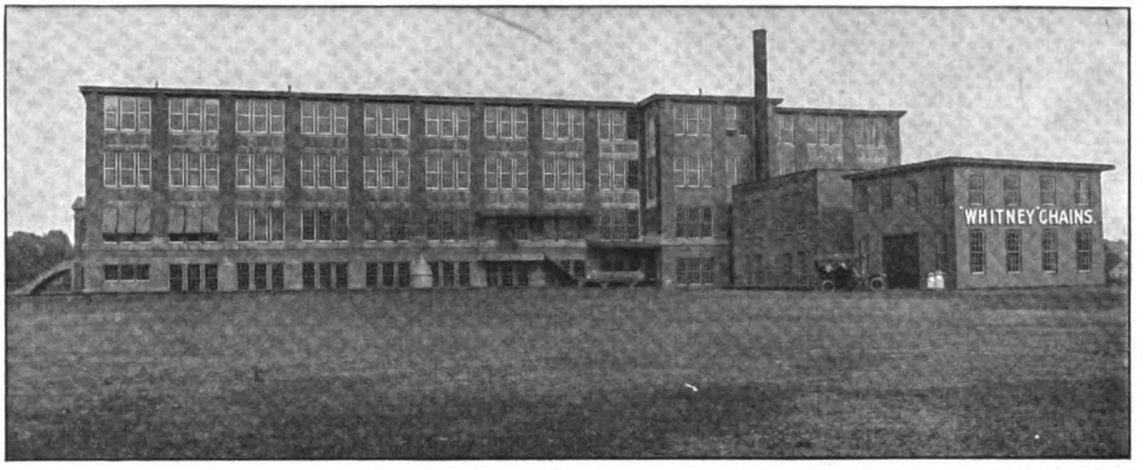
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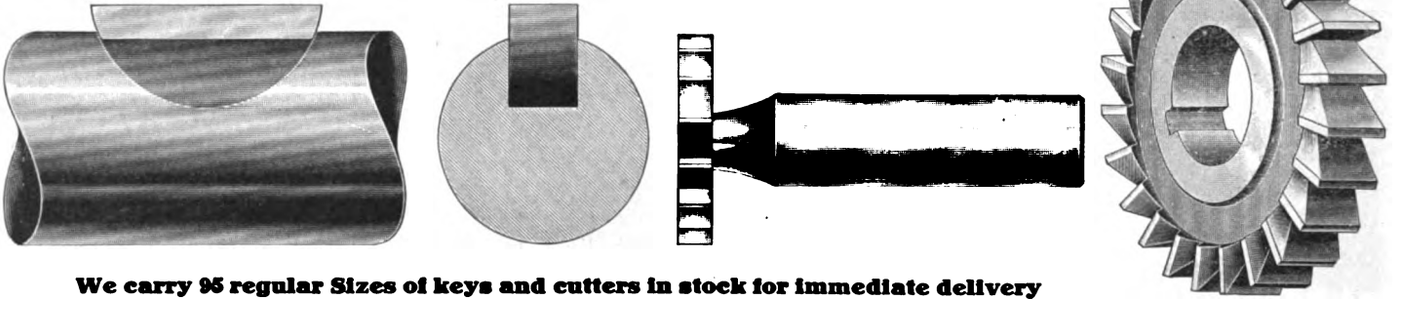
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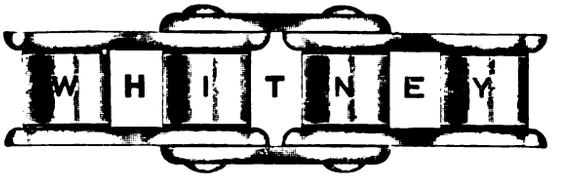
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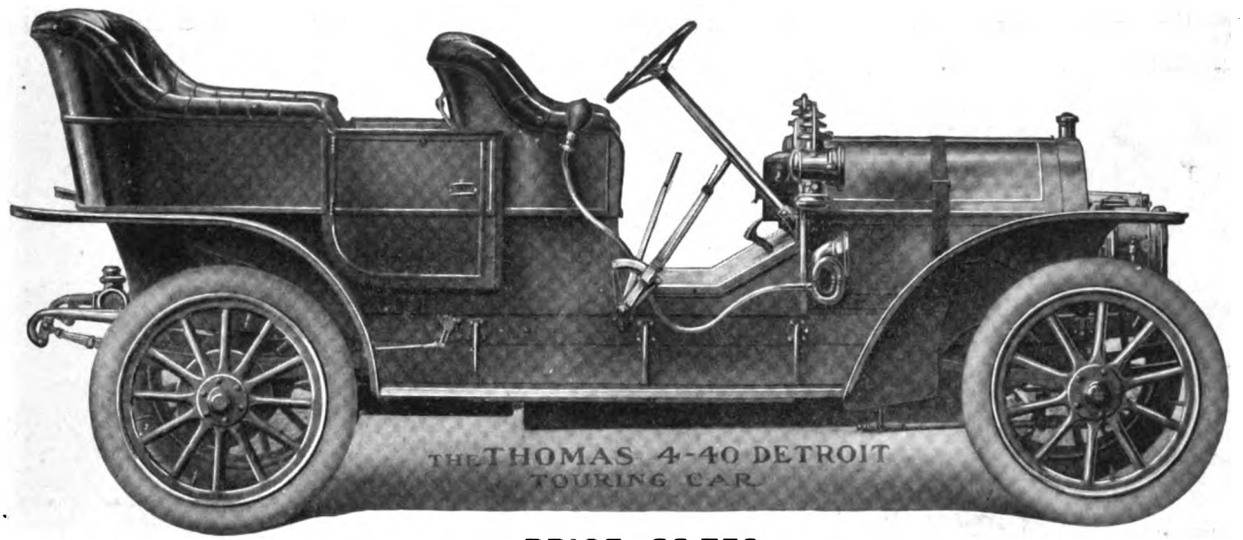


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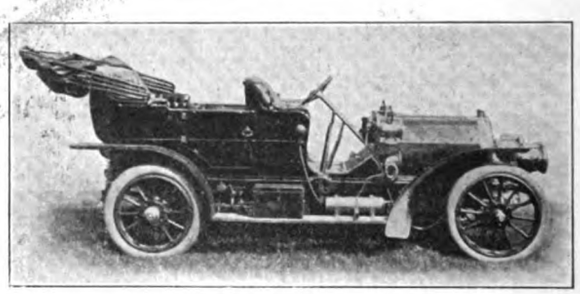
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Combines Proved Reliability With Increased Efficiency and Low Cost of Up-Keep

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WHITE
THE CAR FOR SERVICE



White Wins Quaker City Endurance Run

In the Endurance Run held January 1-2 by the Quaker City Motor Club, the White Steamer was the only car which made a perfect score on the road and also was declared by the Technical Committee to be in perfect condition at the finish. The Contest Committee would not abide by the decision of the Technical Committee. They gave credit for perfect scores to two other cars and ordered a "run-off."

The supplementary contest, held January 4th, served only to emphasize the superiority of the White. The examination then made by the Technical Committee placed the White far in the lead and, accordingly, the MacDonald & Campbell trophy was awarded to the White.

With our entry of one car, we decisively defeated 27 gasoline cars representing 23 different makes. Thus has another important factor been added to the long list of triumphs achieved by the White—the distinctively American car.

Write for Literature

THE WHITE COMPANY
CLEVELAND, OHIO

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means pleasure to the owner as well as perfect security in the knowledge that no better tires are made. Send for new Catalogue and Prices.

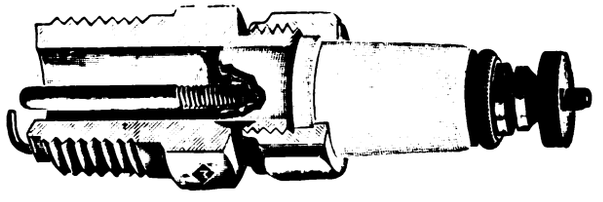
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Memphis, Tenn.—181-183 Madison St.
Boston, Mass.—110 Federal St.
Chicago—1434 Michigan Ave.
San Francisco—423-433 Golden Gate Ave.
Buffalo, N. Y.—912 Main St.
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Omaha, Neb.—11th & Farnam Sts.
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There has been a constant demand for a first-class porcelain plug and we have arranged to manufacture this plug in large quantities and in this way we have reduced the cost of manufacturing the plug, and we offer one of the best spark plugs on the market at a low price. The material and workmanship are the finest on the market and are guaranteed. The list price is $1.00 each.

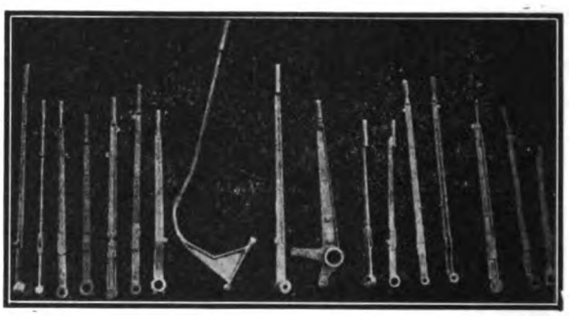
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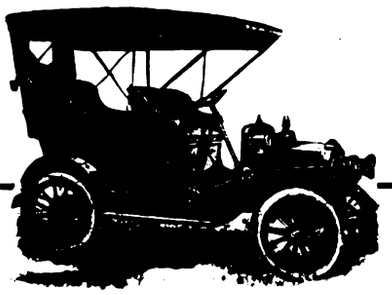
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DON'T GET BUMPED
The First in the Market
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Others Are Imitators

THE HARROUN BUMPER PATENT has been allowed, and as soon as it can be issued we will bring suit against all USERS of Bumpers infringing on and not manufactured under the HARROUN license.
R. W. HARROUN, Patentee.

THE TURNER BRASS WORKS,
SOLE LICENSEES, U. S. A. SYCAMORE, ILL.

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20 H. P.—$1,450 fully equipped.

The Man Who Drives

The "Maxwell"

knows what it is to experience all the pleasures of motoring without that eternal "gnawing at his bankroll" as is the case with a high-priced, costly-to-operate car.

The little overdose of prosperity which resulted in the recent stringency has waked a lot of people to the fact that motor-car money's worth does not go hand in hand with fancy horse-power and exaggerated claims.

The "Maxwell" has never been a speed-car or a freak. It has never boasted hyper-horse-power.

It is, and has always been a utility—a necessity—a family car without a "frill" in its construction.

The records it has established in hill-climbs, economy and endurance tests have never been equalled by any other cars, regardless of price.

Mr. J. D. Maxwell's foresight in designing cars of unfailing efficiency, at prices well within the reach of the average citizen has been well rewarded, to judge from the universal satisfaction of the 10,000 "Maxwell" owners.

That is why these days are "Maxwell" days. Every motor-car buyer will now get a dollar's worth of motor-car for every dollar he pays, and that is just what the "Maxwell" has always given.

Among the important features which the "Maxwell" was the first to introduce, are the three-point suspension, thermo-siphon cooling and multiple-disc clutch.

That features of such prime importance should have first appeared on cars of such low price—$825 for the 14 H. P. Tourabout, $1,450 for the 20 H. P. Touring Car, and $1,750 for the new four-cylinder 24 H. P. Touring Car—is one of the most remarkable incidents of the industry, and is evidence of how far in advance the "Maxwell" line is.

Get a "Maxwell Convincer" at your convenience in any car of the "Maxwell" line. Address Dept. 2.

Benj. Briscoe President.

Maxwell-Briscoe Motor Company

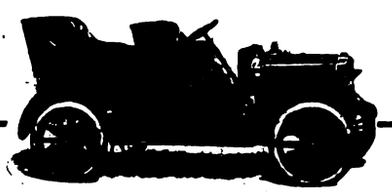
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24 H. P. Touring Car, $1,750.

The Car You Can Afford to Buy and Keep

is the Mitchell.

—Because it is moderate in **price** ($1,000 to $2,800).

—Just as stylish, handsome and well finished as **any** car.

—And is perfect in each **detail** of construction.

—Doing just as well on the road and **standing up to wear** and **tear** just as well as the **extravagantly high-priced** cars.

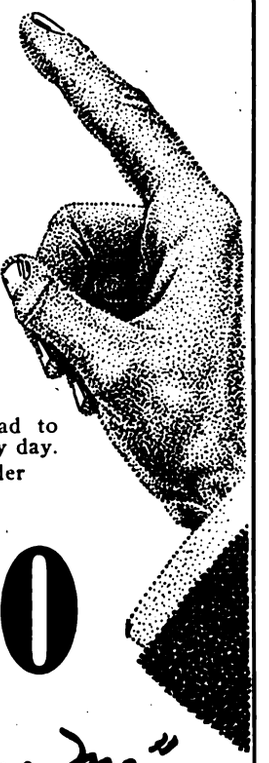
Know this for **yourself,** Mr. Business Man.

Get **demonstrations** of the high-priced cars.

Then form **your** opinion in a demonstration of the **Mitchell.**

The Mitchell agent will be glad to take you out for 50 or 100 miles any day.

Call him up—you are placed under no obligation.



$2000

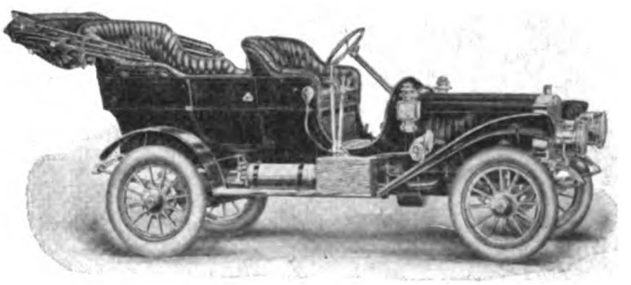
Just say "Show Me"

He'll answer with the **car**—show you a **"silent** argument" that will convince you.

Write for letters proving that the Mitchell is the most economical car to **operate,** and for catalog No. 18, picturing and describing the Mitchell Touring Car $2,000, Limousine $2,800, Roadster $1,250 and Runabout $1,000.

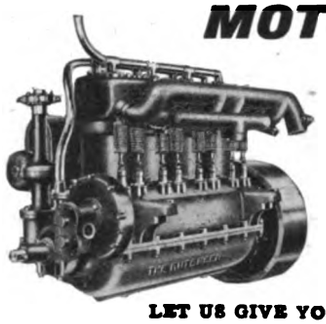
Touring Car shown here—5 passenger, 35 h. p., 4 cylinder, speed 50 miles, finished in Mitchell blue—a very neat and extremely desirable car from radiator to tail light.

Mitchell Motor Car Co., 278 Mitchell St., Racine, Wis.



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that's what we are. We have made the motors in some of the most successful cars, for years. Quality before price, and BOTH right.

The "Rutenber" Carburetor

which as motor experts we picked as the best in the world, we are now making and selling.

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Manufacturers of "Rutenber" Motors, "Rutenber" Carburetors, and Supplies. Light Soft Gray Iron, Brass and Aluminum Castings.

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ONE QUALITY—THE BEST.

OUR LEADERS:

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Large facilities and dependable deliveries.

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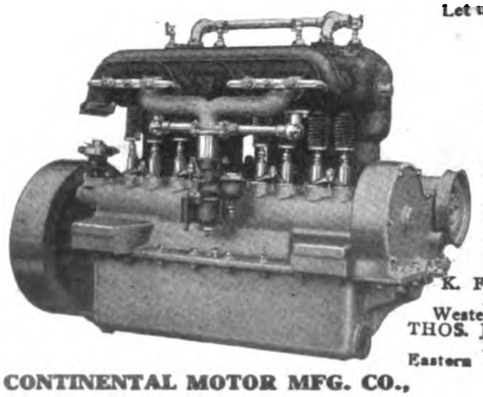
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is a perfect lubricant, without gum, pitch, acids or any other non-lubricants. It will not freeze. It will not melt. Lasts 50 to 100 per cent. longer than other lubricants.

SEND $2.00 FOR 10 POUND TRIAL CAN

The Perfection Grease Co., South Bend, Ind.

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Let us quote you on 4-cylinder motors for 1908

THREE SIZES
4¼ in. x 4½ in.
4¼ in. x 5 in.
5 in. x 5 in.

4-cylinder with self-contained oiling system.

Motors are ready for coupling any standard magneto.

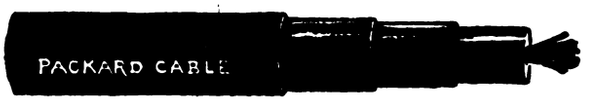
Our new factory and machinery enable us to guarantee quality and deliveries. Also clutches and transmissions. Send for catalogue.

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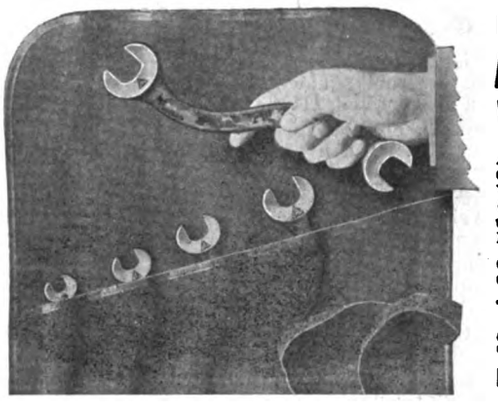
PACKARD
Enameled Ignition Cable



is the choice of the most discriminating buyers.

Our new **MULTIPLE LOW TENSION CABLE** is a new feature. It greatly improves the wiring of any multi-cylinder engine. Samples and prices on request.

THE PACKARD ELECTRIC CO., Warren, O.



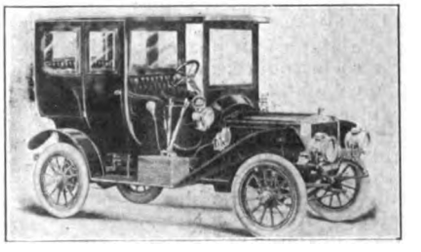
Handiest
Auto Wrenches

A Set of 5 B. & S. General Service Wrenches (10 openings) put up in a handy KIT BAG

Get our last Catalog

The Billings & Spencer Company
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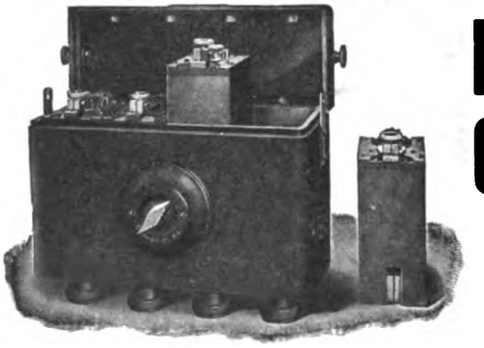


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Large Contracts for entire outputs. Specially equipped for Limousine and all other high-class enclosed work.

Output for this season, 9000 jobs, complete, trimmed and finished

RACINE NOVELTY MFG. COMPANY, Racine, Wis.



HEINZE COILS

Send for 1907 Catalog and Prices.

HEINZE ELECTRIC CO., Lowell, Mass.

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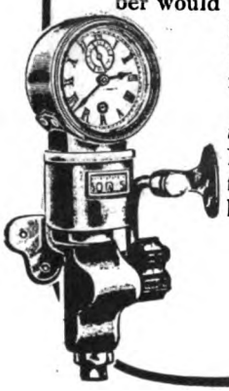
One Price for Warner Auto-Meters

NEVER, until this year of 1908, has there been a speed indicator sold at one absolutely fixed list price. Manufacturers have "named" a list price and some even required the dealers to sell at "that" price.

Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also — and the jobber cut the price.

Then there was fun in the camp. That hurt us — it hurt the dealer, too.

Then, in his haste to close a sale, the jobber would let wrong gear ratios go out — that hurt the consumer, the dealer and ourselves. For the jobber knows no law.



So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

THIS STAND IS POSITIVE.

Warner Instrument Co.
108 Wheeler Ave., Beloit, Wis.

Solar
Lamps "SHOW THE WAY"

Consider Solar —Then Buy Solar

Consider that SOLAR LAMP and SOLAR GENERATORS have fewer parts than any other lamp or generator produced—and that each part is of heavy drawn brass, riveted or screwed together—not soldered. And that each lamp is tested for accuracy of focus and every possible bit of light is utilized. Buy SOLAR and your automobile will be raised to the highest state of efficiency as regards lighting equipment.

Write for catalogue, department 7, sent free upon request.

Badger Brass Manufacturing Co.
Two Factories
New York City **Kenosha, Wis.**

TIMKEN

55% 55% 55%

of all the Exhibitors of both pleasure and commercial cars at the great Chicago Shows held in the Coliseum Annex, 1st Regiment Armory and Tattersalls 7th Regiment Armory are using

Timken Roller Bearings or Axles

When you consider the varied exhibits and large number of individual Exhibitors, this showing is most remarkable—yet it shows that more than half of them are of one mind, notwithstanding the fact that price is always secondary to quality with TIMKEN PRODUCTS.

In the great 3 day Chicago Reliability Run a HAYNES Car WITH WHEEL HUBS SEALED carried off the prize with a clean score. Some say a practical impossibility with bearings not of

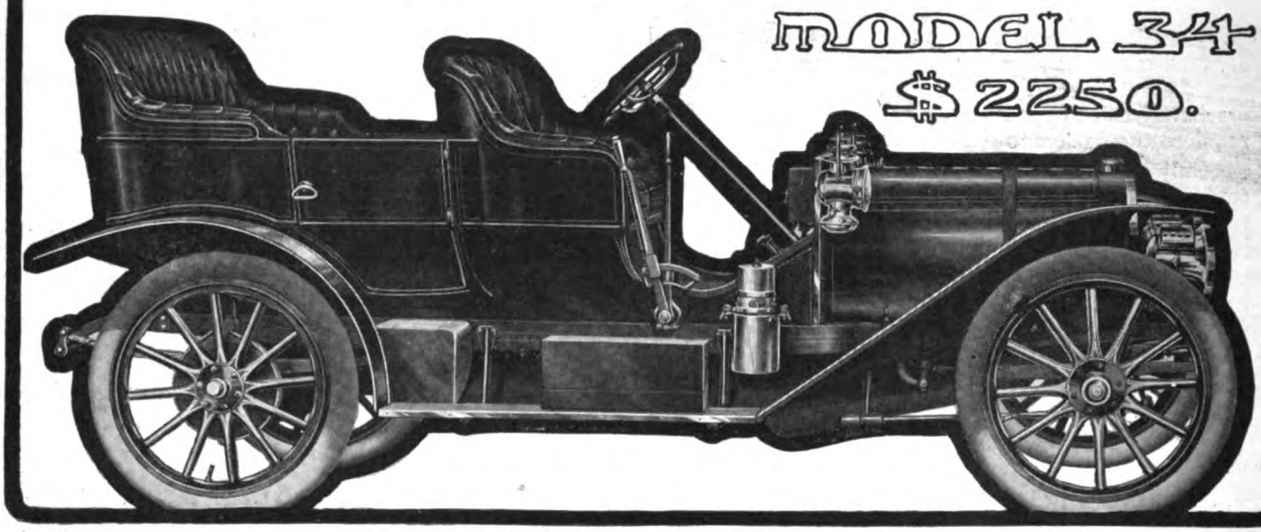
The Timken Principle and Quality

If you are not using TIMKEN PRODUCTS, write us—we have facts to present that not only mean profit but reputation to you.

The Timken Roller Bearing Axle Company
Canton, Ohio

Eastern Branch—10 E. 31st St., New York Western Branch—429 Wabash Ave., Chicago

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Rambler

The Car of Steady Service

As a matter of business judgment examine the mechanical features of this car, such as offset crank shaft, straight line drive, direct from transmission gear to rear axle without an intervening joint, ball or roller bearings throughout the transmitting system, and powerful axle construction and other important details.

Then compare this car at $2,250 with any other car at any price, and be guided by the keen consideration that you would give any other investment of equal moment.

It is quality that counts and we offer all the practical value obtainable at any price.

Let us show you; it may save you hundreds of dollars both in first investment and cost of maintenance.

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Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies

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Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, January 9, 1908. No. 15

BIG COMPANY'S NEW CONNECTIONS

Takes Output of Simplex Factory and Will Market a Line Built to Its Own Specifications.

Palmer & Singer Mfg. Co., of New York City, who for several years have taken the output of Matheson chassis, which contract was relinquished a short time ago, finally have completed re-arrangements which promise to put them in an even stronger and enlarged position in the trade.

As a leader, they have contracted to market the Simplex, which will be made in one model only—of 70 horsepower—listing at $5,750. The Simplex was formerly made by the Smith & Mabley Mfg. Co., Inc., which was later succeeded by the Simplex Mfg. Co. The car itself has always been considered one of the best made and highest grade of American cars, being intended to be a duplicate of the best of the foreign product and incorporating the most advanced foreign mechanical practices. The car, however, was not pushed much beyond the confines of New York and Philadelphia, and, consequently, its worth throughout the country has not been generally known or appreciated. The Palmer & Singer Mfg. Co.'s agressiveness and forceful selling methods, together with their large resources, ought quickly to effect a marked change; in fact, Sales Manager W. M. Botto started this week on a trip to the Pacific Coast during which he will visit the principal cities en route in the interests of the company's new goods. Previous acquaintance with the territory will assist in facilitating his mission.

In addition to the Simplex, the Palmer & Singer company will handle a full line of cars which are to be known as "P & S", and which are being made expressly to their specifications; the line will include a six-cylinder runabout, a touring car and a town car. These P. & S. cars will be secondary to the Simplex in the matter of price only, as Palmer & Singer have their own engineering staff and know the requisites of a high grade car.

Importers' Show Proved Unprofitable.

Despite its surpassing beauty and conspicuous and rose colored newspaper mention, the New York public refused to the end to "warm up" to the Importers' Salon which closed its run in Madison Square Garden, New York, on Saturday evening last. The attendance was meagre throughout. It is doubtful if there were more than 5,000 paid admissions during the eight days and it is practically certain that the entire attendance was less than 10,000. According to unofficial reports, the importers are facing a deficit of about $10,000.

Burke to Manage Mora Branch.

Because of a desire to figure more largely in the metropolitan trade, the Mora Motor Car Co. has decided to establish a branch in New York City, probably at Fifty-second street and Broadway. W. W. Burke, former manager of the Electric Vehicle Co.'s New York branch, and latterly president of the Motor Parts Co., already has been engaged to manage the Mora depot.

Counselman Rejoins Chalmer's Staff.

Lee Counselman, who for seven years was in charge of the National Cash Register Co.'s publicity work, has become sales manager of the E. R. Thomas Detroit Co., thereby rejoining his former chief, Hugh Chalmers, who only recently became president of the Thomas Detroit company. Counselman has traveled far and has owned no less than ten different automobiles.

To Push Continentals in California.

E. L. De Camp, formerly with the New York office of the Packard Motor Car Co., has relinquished that position to take charge of the Continental Tire interests on the Pacific coast as general western representative. He will establish his headquarters at San Francisco.

NEXT A. L. A. M. SHOW IN JANUARY

Decision Reached at a "Forceful but Temperate" Meeting at Which There Was "Something Doing."

What one of those in attendance described as "a forceful but temperate" meeting of the Association of Licensed Automobile Manufacturers occurred in the New York offices of the organization on Tuesday last, 7th inst.

The one item of news for general consumption that grew out of the meeting was the announcement that the next A. L. A. M. show in Madison Square Garden will occur in January, 1909. That the trade had had more than enough of the so-called "early shows" and that this decision to return to January dates was more than probable was stated by the Motor World immediately after the November exhibition. Col. George Pope, as chairman of the show committee, rendered a report of the latter function. It was not the final report, but it stated that when everything is settled a profit of at least $10,000 more than the previous show will be disclosed.

The consideration of show matters was not, however, wholly responsible for the morning session that was prolonged until nearly 3 o'clock p. m., nor for the night session that followed. It had been whispered that there were those members who considered that the association was being too expensively maintained and who also were of opinion that a reduction of the royalty exacted under the Selden patent was desirable and possible; and that these members aired their views and that it was due to the discussion of those subjects that the meeting was so prolonged and forceful there is no doubt. Naturally the proceedings were of an executive character, but it is known that the matter of royalty reduction was referred to the executive committee of the association, who are to take up the subject with the receivers of the

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Electric Vehicle Co., the owners of the Selden patent, who receive three-fifths of 1¼ per cent. royalty that is paid by the members. As the Electric Vehicle Co. now is in the hands of the court, it would appear that any steps that may be taken of necessity will be unusually complicated.

It is also understood that interest was added to the occasion by the efforts of one of the eastern members to have himself placed on the executive committee.

The meeting also accepted two resignations that were tendered—those of Marcus I. Brock, assistant general manager, and C. A. Wardle, head of the agency department.

The gathering was unusually well attended, those present being as follows: W. F. Clarke, Autocar Co.; William E. Metzger, Cadillac Motor Car Co.; H. S. Hart, Corbin Motor Vehicle Co.; H. S. Lloyd, Electric Vehicle Co.; B. A. Baker, Elmore Mfg. Co.; H. H. Franklin, H. H. Franklin Mfg. Co.; C. H. Haynes, Haynes Automobile Co.; E. R. Hewitt, Hewitt Motor Co.; E. H. Cutler, Knox Automobile Co.; S. T. Davis, Jr., Locomobile Company of America; H. A. Lozier, Lozier Motor Co.; C. W. Matheson, Matheson Motor Car Co.; V. M. Gunderson, Northern Motor Car Co.; F. L. Smith, Olds Motor Works; H. B. Joy, Packard Motor Car Co.; L. H. Kittredge, Peerless Motor Car Co.; Charles Clifton, George N. Pierce Co.; A. L. Pope, Pope Mfg. Co.; George Pope, Pope Motor Car Co.; E. D. Shurmer, Royal Motor Car Co.; G. E. Mitchell, Alden Sampson, 2d; R. H. Salmons, Selden Motor Vehicle Co.; E. McEwen, F. B. Stearns Co.; C. C. Hildebrand, Stevens-Duryea Co.; Hayden Eames, Studebaker Automobile Co.; E. C. Morse, E. R. Thomas Motor Co.; E. P. Chalfont, Waltham Mfg. Co.; Thomas Henderson, Winton Motor Carriage Co., and M. J. Budlong, general manager.

Chicago, too, Abandons Early Show Idea.

Chicago also has had enough of "early shows," and as a result the Windy City will return to the old order of things, which means that the next show there will occur during the first week in February, 1909. The show subject was brought up at the meeting of the executive committee of the National Association of Automobile Manufacturers in New York yesterday and was immediately disposed of by being referred to the show committee, which later agreed to recommend that the next Chicago show be held two weeks after the exhibition in Madison Square Garden, New York. H. E. Coffin, representing the E. R. Thomas Detroit Co., was elected a member, being the first to pay the new initiation fee of $500.

At the request of the American Automobile Association, S. D. Waldon and Windsor T. White were appointed to represent the N. A. A. M. in an advisory capacity, and these two, with H. O. Smith, were appointed a committee to attend the meeting of the A. A. A. touring board.

BASIC CLAIM FOR WIRE ANTI-SKIDS

New York Inventor Unearths Ten Years' Old Patent and "Gets Busy"—Goodrich Takes Out License.

What is claimed to be the basic patent on wire tread, anti-skid tires has been brought to light by the inventor, Calvin Thayer Adams, of New York. It is numbered 609,320, and was issued August 16, 1898, the application having been filed December 26, 1895, and Adams, through his attorney, Alfred Wilkinson, already has been successful in having his patent recognized by the B. F. Goodrich Co., to whom a license just has been granted. Mr. Wilkinson promises that suits now will be promptly instituted against all infringers.

In his patent Adams claims as his invention "the combination, with a cushioned vehicle tire, of a tread applied to the entire periphery of the tire, and having metallic wire interwoven with itself, parts of said interwoven wire lying substantially flush with the outer surface of the tread, and forming cushioned antislip bearings covering the sides and bottom of the tread."

"To apply my invention to an ordinary rubber pneumatic tire,"—to quote the languare of the patent—"I prefer to employ a separate tread composed of a strip of rubber fabric or other appropriate material, which I provide with a peripheral succession of hard metallic bearings by, in this example of my invention, weaving or stitching therethrough copper, iron, or other suitable metallic wire in lines running lengthwise of the tread, so as to lie partly on the surface of the strip and substantially flush with the surface thereof. I then stretch and cement the strip thus fitted around the tire, so that it will be integrally united and incorporated therewith. The exposed portions of the interwoven wire will thus form hard bearings, which will bear on the roadway and effectually prevent the wheel from slipping thereon when the roadway is wet and at the same time will spring inward with the tire to allow the yielding material of the tread to bear on the roadway and act as a cushion in the ordinary way. The wire being interwoven with the material of the tread, will remain securely therein even when exposed stitches are worn off, and the exposed ends of the wire will act in the same way as hard bearings to prevent the wheel from slipping."

No Schwab Offer for Pope-Toledo.

Associated Press dispatches from Toledo stating that after "a stormy session between the receivers of the Pope Motor Car Co. on one side, and the creditors and local business men on the other, the receivers agreed to grant Joseph M. Schwab an option on the Pope-Toledo plant," are branded by those in position to know as "absolutely false."

The Schwab alleged proposal was reported by the Motor World several weeks ago and has been "in the air" ever since. At that time the Pope people stated that Mr. Schwab never had made a definite offer for the Pope-Toledo plant, but instead had made merely a verbal proposal through a third party and, of course, receivers cannot submit verbal offers to the courts for approval. Far from refusing Schwab an option on the property, the Pope interests say that without money consideration of any sort, they gave him a ten day option, which later was extended to thirty days. Not even the color of the Schwab money has yet been seen.

The Toledo press despatches add interest to the situation by stating that "it is freely asserted here that Joseph Schwab is simply standing with or back of his brother, Charles M., in this deal and that Charles wants the property for the United States Steel Trust, who desire to have a high grade automobile to compete with a steel competitor which is also making automobiles," which seems a most unlikely situation.

"Spring Opening" for New York Trade.

That the metropolitan automobile dealers are not going into ecstacies over the spring show which those two generous oil prospectors, Messrs. Curry and Tatham, have arranged for them, was made evident at the special meeting yesterday of the New York Automobile Trade Association, when instead of a Curry-Tatham show they considered the project of holding an "Opening Week" or "Automobile Week" in the early spring. After some discussion Gen. John T. Cutting introduced a resolution that it was the sense of the meeting that an "Opening Week" or "Automobile Week" be held under the auspices of the Trade Association during the early spring. A number of those present gave their views on the subject and President Owen appointed a committee to work out the details. Gen. Cutting was appointed chairman, the other members of the committee being Col. K. C. Pardee, Richard Newton, C. R. Teaboldt, and C. W. Wurster, with E. V. Stratton, secretary of the association, secretary.

To Operate the Deere-Clarke Plant.

For the stated purpose of marketing unfinished and finished product and ultimately re-establishing the business, the Midland Motor Co. has been formed to operate the plant of defunct Deere-Clarke Motor Car Co., at East Moline, Ill. The company was incorporated last week, under Illinois laws, with $100,000 capital, the incorporators being C. H. Pope, A. E. Montgomery, C. E. White, William Butterworth and E. H. Guyer. The property of the defunct Deere-Clarke company, which was thrown into involuntary bankruptcy last September, was purchased on November 1st by representatives of the corporation formed last week.

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EXPORTS FELL OFF IN NOVEMBER

But the United Kingdom and France Increased Their Purchases — Losses in Nine Geographical Divisions.

Exports in November failed to keep the pace set by the previous months and the record shows a decrease from the corresponding month of the previous year, the totals for complete machines and parts being $173,552 as against $275,759 during November, 1906.

The number of complete cars shipped was correspondingly less, too, being 99 as against 173. As for the past three years, the United Kingdom continues to be the greatest export market for American machines and the constant increase in its purchases goes on unabated, the November figures being $49,419 as against $45,076 in the previous November. France also shows its usual monthly gain, the exports to that country being $26,304 as against $18,712. The division known as Other Asia and Oceania jumps to $13,648 from $8,643. Germany and South America were the only other divisions showing gains, the remaining nine returning decreases for the month. Of the latter the most conspicuous is that of British Australasia, with a fall to $4,439 from $40,640. Mexico's decline for the corresponding months was down to $15,662 from $64,827.

For the eleven months ending with November the total shows a gain of $1,268,508 in export business over 1906, the number of complete machines for the period in 1907 being 2,721. All of the divisions except Mexico and Africa show a gain. Despite its decrease, however, the big volume of business done gives Mexico the fourth position. First position in volume of sales goes to the United Kingdom, with British North America and France running second and third, respectively.

The record in detail is as follows:

	November		Eleven Months Ending November		
	1906	1907	1905	1906	1907
Cars, carriages, other vehicles, and parts of:—					
Automobiles, and parts of	.....	.....	$2,499,010	*$2,356,110	.....
Automobiles †	$230,491	$142,946	.....	1,610,426	$4,861,622
Parts of	45,268	30,606	.....	200,496	593,918
Exported to—					
United Kingdom	45,076	49,419	631,787	1,110,617	1,671,680
France	18,712	26,304	262,058	305,506	587,886
Germany	3,991	6,136	103,806	128,181	170,186
Italy	1,330	315	159,905	241,258	242,660
Other Europe	10,725	4,616	238,902	207,196	272,290
British North America	32,241	20,585	513,761	847,272	1,145,564
Mexico	64,827	15,662	162,780	678,280	573,116
West Indies and Bermuda	22,353	13,633	131,361	230,187	249,637
South America	19,929	12,014	54,912	142,311	220,933
British East Indies	5,910	6,606	31,097	32,832	35,556
British Australasia	40,640	4,439	111,119	147,116	175,356
Other Asia and Oceania	8,643	13,648	60,878	72,443	91,162
Africa	581	109	33,528	16,100	8,048
Other countries	801	66	3,116	7,733	11,466
Total automobiles, and parts of..	$275,759	$173,552	$2,499,010	$4,167,032	$5,455,540

* Figures are for six months, January to June, 1906.
† Number not stated prior to July 1, 1906.

Engineers Elect Fay President.

Thomas J. Fay, of New York City, succeeded A. L. Riker as president of the Society of Automobile Engineers, at the third annual meeting and election of officers, held in New York Friday last, 3d inst. E. T. Birdsall, Rochester, N. Y., was elected second vice-president, and Henry Hess, Philadelphia, treasurer. President Fay appointed Charles B. Hayward, secretary. Russell Huff, Detroit, and F. J. Newman, Chicago, were elected managers for three years, succeeding A. H. Whiting and H. Vanderbeek, whose terms had expired. The other officers are Henry Ford, of Detroit, first vice-president, and Hiram Percy Maxim, L. T. Gibbs, H. M. Swetland, and H. E. Alden, managers.

After the election, papers were read as follows: "Automobile Hub Bearings," by Henry Hess; "Some Notes on Taper Roller Bearings," by H. W. Alden; "Usually Unobserved Refinements of Automobile Construction," by J. M. Ellsworth and Thomas J. Fay; and "Nature Hard Gears," by Thomas J. Fay. The annual dinner was held in the evening, followed by a second business session. It was decided to hold quarterly meetings hereafter, the first being scheduled for the week of the Boston show, which will open in Mechanics Building and Horticultural Hall on Saturday, March 7th.

Mensus Wooing Houston Capitalists.

A. C. Mensus, of the unidentified Mensus Motor Co., Grand Rapids, Mich., is looking for a site for an automobile factory. He was first heard of a long way from home—in Houston, Texas, where he was seeking the support of the Business Men's League.

Tincher Joins the A. M. C. M. A.

The Tincher Motor Car Co., of South Bend, Ind., has been elected to membership in the American Motor Car Manufacturers' Association. This accession makes the fifty-second name on the association's roll.

SUDDEN DEATH OF M. L. GOSS

Unexpected Outcome of Apparently Slight Accident—His Long Continued Prominence in the Industry.

What were supposed to be slight injuries, caused by a trivial accident several days before, caused the death on Friday last, 3d inst., of M. L. Goss, secretary of the Baker Motor Vehicle Co., Cleveland, Ohio, and one of the most widely known men in the industry.

On the previous Monday evening, while driving to his home, Mr. Goss's hat blew off He got out of his car to recover it and in doing so was knocked down by another automobile. The fall was not violent, however, and he picked up his hat and drove home, apparently none the worse for the mishap. He was a portly man, however, and alarming complications set in on Thursday and caused his death the following night.

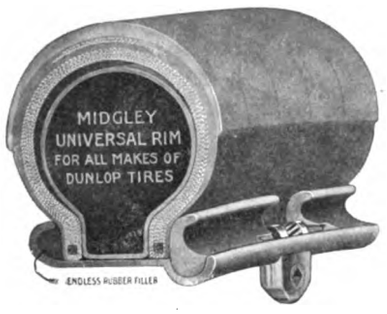
Mr. Goss had been secretary of the Baker Motor Vehicle Co. since its organization. He was in his fifty-ninth year and had lived in Cleveland most of the time since 1871, when he started in the employ of the Howe Sewing Machine Co. In 1879 he went to the White Sewing Machine Co., and later became its secretary, holding that position until 1893. In the middle nineties Mr. Goss was sales manager for H. A. Lozier & Co., in the wholesaling of bicycles at Cleveland, later spending some time with the Keating Bicycle Co., at Middletown, Conn. As the automobile industry grew Mr. Goss took up the electric vehicle and has remained a prominent factor in the Baker company and in the business. He served several terms as a member of the executive committee of the National Association of Automobile Manufacturers.

Personally, Mr. Goss was of the most genial temperament and was will liked by all who knew him even passingly well. To his intimates he was long and affectionately known as "Pop" Goss. He leaves a widow and a son and daughter. His funeral occurred on Monday, 6th inst., the interment being made in Lake View Cemetery, Cleveland.

Empire Making Insulated Wire.

In addition to tires and tubes, the Empire Automobile Tire Co., Trenton, N. J., has added insulated wire to its productions. The cable of the Empire secondary wire is covered with a rubber stock designed to resist high voltage and to withstand great abuse. The rubber stock is covered with braid, and over this braid is placed a rubber stock that is absolutely oil-proof. Two braided jackets are placed on the outside. The Empire primary wire is also insulated with oil-proof rubber, and finished with two braided jackets.

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50
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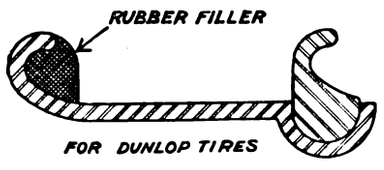
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Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞ Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, JANUARY 9, 1908

To Minimize Existing Evils.

It is good that His Honor the Mayor should have seen fit to devote a portion of his annual presentment to the board of aldermen to the question of the several abuses to which the motor car is commonly loaned in the City of New York. It is to be hoped, moreover, that that august body will profit by the hint and take sane action looking toward the mitigation of each of the evils mentioned. It is more than a year since the Automobile Club of America undertook its campaign of betterment in these branches of automobile useage, and since the efforts thus expended have been only partially rewarded, it is high time more drastic measures were taken to reduce the nuisance which is fast becoming unendurable in some respects.

Thus far, the efforts of the Automobile Club have been rewarded to the extent of establishing a fine line of demarcation between the considerate and inconsiderate motorist. Hence the establishment of local measures preventing the use of the sirens within city limits, as well as the restriction of smoky exhausts, muffler cutouts and acetylene headlights can in no way be considered as an attack upon motorists as a class, but only upon those who are not alive to the objectionable nature of such practices. They cannot in any way be regarded in the light of a general hardship. European municipalities already have found it necessary to establish such regulations and they are accepted without question and enforced without difficulty. Like the speed laws, they do not hamper the legitimate use of the automobile, nor question its value as a vehicle.

As for the recommendations of special license restrictions for such of the motor vehicles as are in the public service, it is only fair to the public that such vehicles shall be under municipal control to a certain extent. The danger of too restrictive action in this respect is, of course, imminent, considering the proclivities of aldermanic bodies as a class. But there is always the opportunity of obtaining court judgment on the rectitude of any such measure, and its absence is rather more a menace to the 'bus or cab promoter than too stringent a measure would be, since it always leaves the door open for unscrupulous traffic warfare and the reckless promulgation of impossible schemes. Altogether it is to be hoped the aldermen will listen to the whole of the Mayor's advise and act upon it with all the wisdom they possess.

Promoting Efficiency of Employes.

In the "breakdown" competition recently held by a French firm operating a large number of motor cabs, is a suggestion which promises a great deal in the way of improved operating efficiency on the part of the employes. In the growing use of the taximeter cab and the commercial car of one sort or another, is found a condition which has been thrashed out over and over again in other lines of activity with varying degrees of success. It is not enough to offer work and wages to the employe and to hedge him about with restrictions of one sort or another. His interest in his work must be kept up, either through pride in his calling or through his ambition, or untidy and slipshod work is the result, with perfunctory attention to details and unfaithful service in other ways. Like the sagacious physician of the old school, the successful manager of men must administer candy and pills according to the temper of the patient quite as much as with regard to the nature of the complaint. And the administering of this moral physic to the employe is quite the most arduous and difficult task which the superintendent and his lieutenants have to face.

Unlike the motorman of the trolley car, the automobile driver must be thrown upon his own responsibility as regards keeping his machine running, once he has left the garage, and unless the mishap involves some vital portion of the machine, no "breakdown" must be permitted to interfere with the mileage account turned in at the end of the day. It is customary to give the prospective driver of the commercial vehicle as much information and training as will enable him to operate his machine under placid conditions, and as much more relating to emergencies as he is able to absorb in a few hurried lessons. Generally his training ends at that point, and unless he be ambitious, his commercial career is apt to be limited by those conditions. How then to show that type of man the possibilities for advancement within his own sphere and reveal to him a field for useful and well paid labor without skipping over to the idle and generally fruitless existence of the "choffer," is something many managers would like to know.

In the methods and details of diagnosing motor troubles appears to be a good point about which to hinge a system of training which would be both useful to the vehicle owner and interesting to the men. Competitions of the sort indicated require little effort or expense to maintain. They would serve to keep the operators thinking about the mechanical side of their work, and would prove invaluable in the way of training if properly carried out. Supplementing such tests, it might be possible to arrange a system of prizes or bonuses for the drivers who obtained the greatest mileage from their vehicles without submitting them to the repair department, or who succeeded in making the most rapid and expedient roadside repairs consistent with economical vehicle maintenance. Such a method or methods could not be carried on for any length of time without developing substantial rewards for the successful ones in the way of promotion or increased pay, and consequently, the proven result of successful competition would tend to popularize the

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system. Certainly the idea holds promise and is worth following up.

Worth of the Dynamometer.

It is a source of considerable local pride that the Automobile Club of America has at length set up its long promised car dynamometer and given able demonstration of its capabilities. That it is both original and complete in its construction should further increase the satisfaction felt in its culmination. When first announced, some three years ago, it was stated that the matter of its construction had been placed in the hands of the technical committee. Since that time, however, little has been heard of it, and its development has proceeded without any blare of trumpets to herald it. Therefore its completion and demonstration come very much as a surprise to most of those who are outside the range of the gossip of the club.

It cannot be questioned that the testing plant officially put into service on Tuesday afternoon is a useful and effective one and that by its operation it will be possible not alone for the owner club members to arrive at certain information concerning their cars which hitherto has been a matter of doubt and conjecture, but also that research work can be carried on to an extent which has not been possible hitherto because of the lack of complete apparatus. Here can be developed not only the figurative "horsepower-at-the-wheels" which has cut more or less of a caper at the show booths, but also the efficiency of the transmission mechanism, the holding power of the brakes in both directions, and other indirect investigations in which the power elements is in any way considered. As these experiments may be carried on without any special preparation of the machine, it being necessary merely to run it on the rollers, make it fast and connect up the exhaust, it is evident that the inducement to close study of the questions involved in the power equation of the car is very greatly stimulated by the development of this machine.

It has been deplored again and again, that no American body possessed the facilities offered by the laboratories of the Automobile Club of France, or the Royal Automobile Club of England. This hindrance to general advancement now being removed it remains only to put the plant to proper and effective use. It is not to be supposed that an investment as great as this is said to be will be permitted to go to waste. At the same time it may be pardonable to express the hope that the use of the plant will not be confined at all closely to club members and their cars, and that the service fee be in no wise prohibitive, in the event of the plant being placed at the disposal of the public. The free and general use of such an apparatus cannot be regarded in any other light than as a public benefaction, especially when applied to an industry which is admittedly prey to so much chicanery as this. Hence it is to be hoped that the liberality evinced by the club in installing its testing plant will be extended speedily to the encouragement of proper and well ordered use of this excellent device.

Concerning the "Composite Car."

In its annual review of the closing year that venerable authority, the Scientific American discusses the progress of automobile design in optimistic vein, calling attention to the small and decreasing number of novelties which have made their appearance during the year as an indication that the approximate final type of design has been arrived at. The composite type automobile at the close of the year 1907 is described as having "a pressed steel riveted frame; a 40 horsepower, 6 cylinder engine; magneto ignition, with the jump spark in reserve; is water-cooled, with its pump driven by gears from the engine shaft; has a three or four speed sliding gear of the selective type; a cone clutch, or if not this, one of the floating disc or ring type; and the car body will be distinguished by straight lines and a general simplicity and purity of outline and coloring."

As a matter of fact, a census of the American product, taken by comparing 322 models catalogued by our own manufacturers, shows only 39 6-cylinder cars actually for sale, counting the different models produced by various makers as separate cars for the sake of comparison. This is a representation of a little over 12 per cent., while the total of 4-cylinder models amounts to near-66 per cent., double and single cylinder types coming to 16 and 4 per cent. nearly, in the respective cases. England, even, as being the home of the 6-cylinder movement as a significant manufacturing effort, fails to make a much better showing for this type. For even counting all the cars listed in the British market, only 18 per cent. are found to have 6-cylinder motors, while 65 per cent. are of the quadruple type, 12 per cent. double, and 3 per cent. single.

This is a catalogue census pure and simple, but as specifications drawn from the most improved cars existant at the close of 1907, must necessarily relate to 1908 cars almost entirely, judgment on the basis of sales is impossible. Even on that basis, however, the fairly built composite car should be of the 4-cylinder type. Conclusions of this sort are useless unless compiled with regard to average practice rather than with regard to what may be called "best engineering" at the time.

COMING EVENTS

January 14-18, Hartford, Conn.—Hartford Automobile Dealers' Association show in Foot Guard Armory Hall.

February 1-8, Providence, R. I—Show in Providence State armory.

February 10-15. Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory.

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association show in Central armory.

Yonkers, N. Y., affords a fair illustration of the inconsistency of which automobilists have a right to complain. Although previous wildcat races had resulted in several near-tragedies and though formal protest had been lodged with the mayor and the chief of police, those worthies were on the list to serve as officials of the dangerous and unauthorized midnight race of motorcyclists who tore through Yonkers at an unholy pace of 40 or 50 miles per hour, in the darkness of the New Year. Automobilists who have chanced to pass through the place in the safe hours of daylight at less than half that speed, have been pounced upon and haled to jail. It would serve a good purpose if such officials were called to account for such connivance at law breaking and such miserable inconsistency.

It is evident that we are now due for an epidemic of taxicab companies. The number of them that are forming is becoming formidable. It is safe to say, however, that of those who "take out their papers," the number that actually will operate cabs on the street will be insignificant. There are some honest, hopeful souls who appear to imagine that a taxicab service is analagous to the keeping of a livery stable.

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THREE CARS TIED A SECOND TIME

Result of Philadelphia Endurance Run Decided by Technical Process—Trophy Awarded to Sheridan.

Hal. K. Sheridan of Philadelphia will hold the MacDonald and Campbell trophy for one year. The judges in the Quaker City Motor Club's two-days endurance run from Philadelphia to Allentown and return, Wednesday and Thursday, 1st and 2d insts., have ruled that he won the contest. As a result, not every one is happy.

When the run finished on Thursday three cars were found to have clean scores in the touring car class. These were Sheridan's White, Bert Maucher's Peerless, and Frank Yerger's Studebaker. Exercising its prerogative to make the three cars run the contest over in an effort to break the existing tie, the contest committee made the cars follow the same course on Saturday, 4th inst., as in the original contest, except that they were required to cover the 172.6 miles from Philadelphia and Allentown and return in one day instead of in two. The tie remained unbroken when the cars finished and then the technical committee got busy with the result that Sheridan was awarded the trophy, with Maucher second and Yerger third. The final findings of the technical committee have not been made public, but the demerits suffered by the two losing cars were of a minor nature, the Peerless having lost a hood catch and a small spring on the brake-band. John Trumbull, who drove a Packard, was the only car in the high powered runabout class to finish with a pecfect score, and the Maxwell won the light runabout trophy with 51 points against it.

As a result of the decision the Philadelphia motor colony has lost its usual placid quietude. It has caused one member, who was interested in the Peerless, to resign from the club, and challenges from the Studebaker representatives to Sheridan, the driver of the winnig White, have been flying thick and fast, while Sheridan has retorted that the Studebaker man may be sorry he challenged if the technical committee's report is made public. As chairman of the contest committee, E. C. Johnson has been placed in a position that he would rather not be in, as unfortunately he happens to be the Philadelphia representative of the White.

When the cars started on their return journey from Allentown Thursday morning, six touring cars and two runabouts had no marks against them so far as could be determined. Three of the former and one runabout lost marks before Philadelphia was sighted in the afternoon. Frozen roads and bad water breaks on the roads between Allentown and Kutztown, the first control, caused many cars to have demerits checked against them, but from Kutztown to Philadelphia the going was easy. There were no incidents worth recording, except that in Reading the police kept the streets clear for the contestants, in striking contrast to the arrests made in that city when the endurance run passed through it last year.

When Philadelphia was reached the real work of the officials began. The technical committee's function was to examine all the contesting cars and report to the contest committee any defects or breakages found upon those cars after the run was finished. The report was made to the latter committee and passed upon before the identity of the particular car under investigation was made known, so that the decisions were manifestly fair to all concerned in the matter.

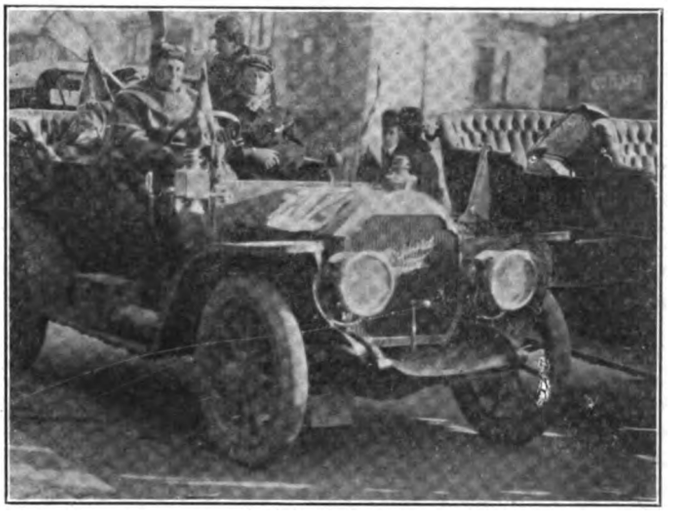
The committee found that with the exception of two bolts missing from the right shock absorber on the Studebaker, that car had no points against it, and although Sheridan, driver of the White, prot sted, the committee had to allow Yerger a clean score as it previously had been decided that no penalizations should be imposed on accessories, such as tires, lamps, speedometer, shock absorbers, tops, clocks, odometers, and so forth. The committee assessed ten points against Maucher's Peerless, claiming they found the transmission loose, but the driver protested, and as the required fee accompanied it, the committee was obliged to consider the protest. Maucher claimed that all Peerless cars are made with transmissions slightly loose. After a thorough examination of five brand new cars, the transmissions of which were found to be the same as in Maucher's car, the ten demerits were cancelled and his clean score restored. John Trumbull's Packard was the only car that could produce a clean sheet in the high powered runabout division.

This gave three cars with perfect scores for the MacDonald and Campbell trophy for touring cars and as the committee could see no other way of disposing of the tie it ordered Sheridan, Maucher and Yerger to again cover the course, this time in one day, under otherwise the same conditions that governed the original run. The trio set out Saturday morning and kept within sight of each other all the way, finishing on exactly schedule time, one minute apart, in Philadelphia Saturday afternoon. As the tie still remained unbroken the technical committee made a critical examination of the three cars and reported to the contest committee, which decided in favor of Sheridan for first place, Maucher for second and Yerger for third.

The prize for light runabouts was awarded to the Maxwell Company's Maxwell, which had 51 points against it. W. H. Cram's Mitchell was second with a deduction of 62 points. These were the only two cars that finished, and unlike those in the other divisions, had only to check out in the morning and in at night. A prize also was awarded in the "go-as-you-please" division, which as its name implies, was

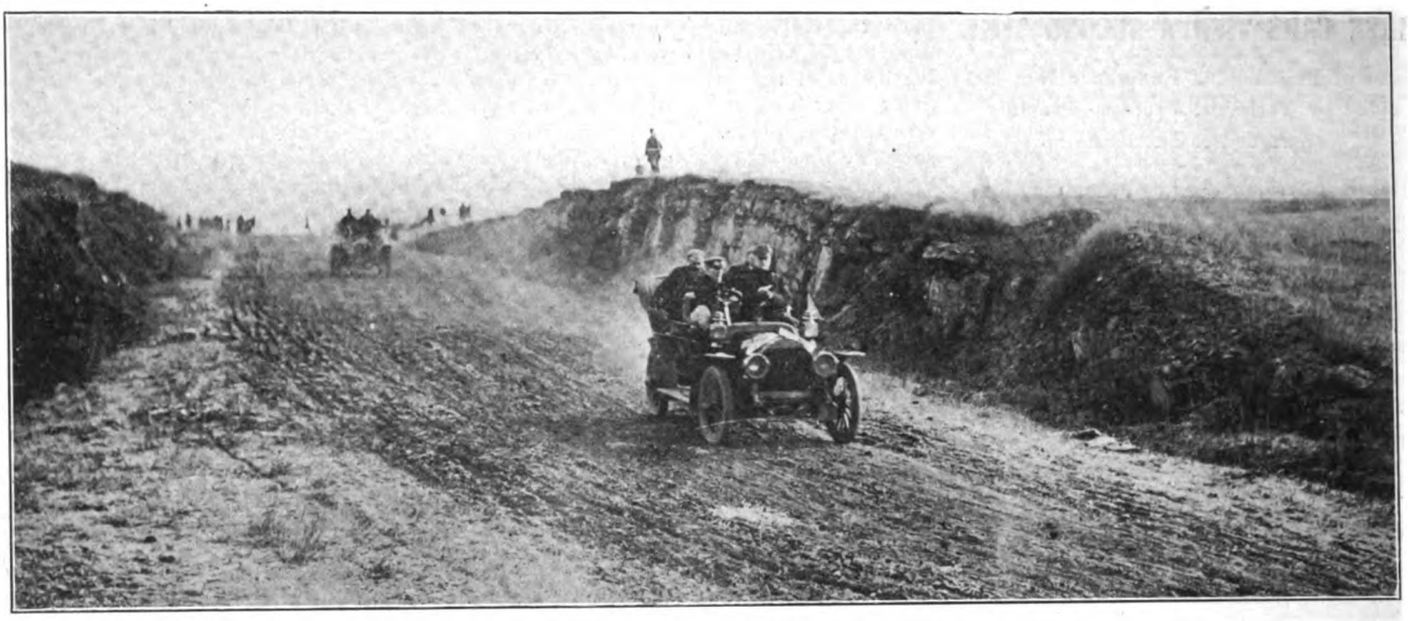


HAL. SHERIDAN, WINNER OF THE TROPHY



ROBERT SHIRK, ONE OF THE BROOM BRIGADE

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YERGER (STUDEBAKER), LEAVING ALLENTOWN.

for those who wished to accompany the run, and not be bound by schedule or regulations. The winner was determined by a vote for the most popular driver and Daniel Webster, a Vanderbilt cup race driver, won by an overwhelming nuber of ballots.

After the run, there was quite a demand for brooms, which were carried aloft and which were supposed to represent a "clean sweep." There were so many brooms displayed, however, that the Philadelphia public may be pardoned if it was confused and unable to decide exactly who was "it."

Sheridan, who was entitled to carry the biggest broom, is the same driver who won the run-off for the Hower trophy in the last Glidden tour.

The appended table shows the scores of the cars that finished the run:

Touring Cars.

Driver.	Car.	Road Penalty.	Technical.	Total.
**Hal K. Sheridan,	White	0	0	Clean
Bert Maucher,	Peerless	0	0	Clean
Frank Yerger,	Studebaker	0	0	Clean
C. E. Titman,	Matheson	1	0	1
Harry Michenor,	Lozier	2	*n. e.	2
James P. McNichol,	Matheson	3	Clean	3
T. W. Berger,	Oldsmobile	0	5	5
H. B. Shade,	Pullman	7	n. e.	7
O. W. Hoffman,	Stearns	0	9	9
William Crawford,	Franklin	11	n. e.	11
N. J. Fox,	Locomobile	12	10	22
Webb Jay,	Kisselkar	24	n. e.	24
J. A. Moran,	Stevens-Duryea	26	n. e.	26
Maylin Leinau,	Acme	26	n. e.	26
Paul B. Huyette,	Peerless	31	n. e.	31
H. B. Hills, Jr.,	Royal Tourist	38	n. e.	38
H. K. Kneeper,	Frayer-Miller	16	25	41
Hills Motor Car Co.,	Corbin	42	n. e.	42
Robert Shirk,	Stoddard-Dayton	0	45	45
A. J. King,	Studebaker	64	n. e.	64
Frank LeFlen,	Garford	15	50	65
Robert Auschenfelter,	Autocar	107	n. e.	107
James W. Florida,	Locomobile	109	0	109
G. A. Purcival,	American	121	n. e.	121
T. M. Twining,	Crawford	168	n. e.	168
H. P. Frey,	Columbia	174	n. e.	174
H. F. Greenwalt,	Mitchell	186	0	186
A. J. Martin,	American Mors	222	n. e.	222

** Sheridan won run-off. * n. e.—Not examined.



TRUMBULL (PACKARD), WINNER IN RUNABOUT CLASS.

High Powered Runabouts.

John Trumbull, Packard	0	0	Clean
E. S. Youse, Thomas	15	n. e.	15
A. A. Jones, Ford	20	n. e.	20
Stewart Lafear, Pullman	34	n. e.	34
Robert Morton, Pullman	37	0	37
S. H. Collum, Stearns	0	40	40
J. R. Maynes, Autocar	100	n. e.	100
P. E. Varney, Oldsmobile	112	n. e.	112
William Henry, Ford	397	n. e.	397
Thomas Wilkinson, Packard	Out		
J. W. Parkin, Parkin	Out		
F. Gilkinson, Columbia	Out		

Light Runabouts.

Maxwell Company, Maxwell	51	0	51
W. M. Cram, Mitchell	62	0	62
J. A. Hess, Autocar	Out		

Go-as-You-Please.

Dan Webster, Frayer-Miller, Awarded to most popular driver.



SHERIDAN (WHITE), ON THE BAD ROAD NEAR ALLENTOWN.

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PROGRAM FOR FLORIDA SANDFEST

Seven Events on the Card, Including Contest for Dewar Trophy—List of the Prizes and Conditions.

That freak racing cars, designed for abnormal speeds at short distances only will be eliminated at the annual Ormond-Daytonna carnival, which is on the calendar for the week March 2d to 7th, is made plain in the entry blanks sent out this week by the Automobile Club of America, which is managing the meet, In order to qualify for the short races—the mile and kilometre record trials, the one mile race for the Dewar cup, and the two miles a minute event—the cars must have competed in one of the three long distance events, and must have covered at least 100 miles at an average rate of 60 miles per haur. As any car that can maintain a mile-a-minute speed for one hundred miles is surely not a freak, this condition doubtless will be a factor in swelling the entry lists.

According to the entry blanks but seven events have been carded, but if these are well contested there should be no complaint from spectators, provided of course, the meet is managed with any sort of system, something that has not prevailed at previous Florida carnivals. The exact time of starting each event will depend on the tide and condition of the beach, and all the races will be started from the club house at Daytonna, so far as is practicable. As has been told in the Motor World, loops will be built at each end of a sixteen mile stretch of sand, affording a 32 miles circuit for the long races.

Doubtless the most important event carded is the 160 miles race for stock chassis, and manufacturers entering cars in this event will have to prove that they have actually manufactured and delivered or have ready for delivery at least ten similar chassis in each and every respect, on or before February 15th. In this event the total piston area shall not exceed 103.87 square inches, which will admit the equivalent of a four cylinder engine having a bore of 5¾ inches. In all the other events cars will be limited in weight to 1,100 kilograms (2424 pounds). Following is the full program of the meet:

The Automobile Club of America Cup—288 miles (nine laps of 32 miles), standing start. Entrance fee, $200.

Invitation Race for gentlemen amateur drivers, for a Silver Cup—128 miles (four laps), standing start. Cars to be eligible must have been owned by the entrant prior to the time of the public announcement of the race. Entrance fee, $100.

Minneapolis International World Championship Trophy—100 miles, standing start. Present holder, S. F. Edge, London, England. The cup must be won twice to obtain permanent possession. Entrance fee, $50.

Stock Chassis—160 miles (5 laps). A "stock chassis" shall mean that the maker of the same shall have actually manufactured and delivered, or have ready for immediate delivery, at least ten similar chassis in each and every respect, on or before February 15th, 1908. The type of the body is left to the choice of the entrant, provided it has seats for at least two and carries at least two (driver and mechanic). Any American or foreign stock chassis is eligible, providing that its total piston area shall not exceed 103.87 square inches, which will admit the equivalent of a four cylinder engine having a bore of 5¾ inches. Silver Cups to contestants finishing first and second. Entrance fee $100.

One mile, flying start, for the Sir Thomas Dewar World's Championship Trophy. Present holder is Fred Marriott of Newton, Mass. Not more than four cars will run in a heat. A second round of heats will be run, if necessary. The winner of each heat (or second round of heats, as the case may be) and the fastest second car to compete in the final. The entrance fee for this event, as fixed by the deed of gift, is $50, which is deposited in a fund in the hands of trustees of the trophy for special road construction.

Two miles, flying start, for the two-mile-a-minute trophy, to be run in the form of time trials, winner to equal or exceed a speed of 120 miles an hour. Entry fee $50.

Record speed trials for mile and kilometer. Entrance fee $25.

Another Pasadena-Altadena Hill Climb.

After much discussion the Southern California Automobile Dealers' Association finally has decided to repeat its annual Pasadena-Altadena hill climb. It is on the calendar for February 22d, and the program for decision is as follows: Runabouts, $1,000 and under, two passengers, weight per passenger, 130 pounds. Touring cars, $1,001 to $1,500, four passengers; weight per passenger, 130 pounds. Touring cars, $1,501 to $2,000, five passengers; weight per passenger, 130 pounds. Touring cars, $2,001 to $2,500, five passengers; weight per passenger, 145 pounds. Touring cars, $2,501 to $3,000, five passengers; weight per passenger, 165 pounds. Touring cars, $3,000 to $4,000, five passengers; weight per passenger, 175 pounds. Touring cars, $4,000 and over, seven passengers; weight per passenger, 145 pounds. Runabouts, $3,000 and under, two passengers; weight per passenger, 150 pounds. Runabouts, 3,000 and over, weight per passenger, 150 pounds. Special event for four cars with fastest time in previous events.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

ROUTE FOR NEW YORK-PARIS RACE

The Itinerary Permits of Option at Several Points—Possible Failure Discounted in the Conditions.

Although the names and number of starters is shrouded in beautiful uncertainty, the Paris newspaper which is promoting the so-called New York to Paris automobile race, has announced the itinerary selected for the great contest in shipping motor cars as freight over circuitous and difficult routes. It is a little indefinite in spots, but in a general way indicates the path the carriers will have to take. As outlined it consists of "the crossing of the United States without any auxiliary power whatsoever, unless during the passage through the Rocky Mountains and the Sierras. Then from San Francisco to Seattle along the glacial coast of British Columbia as far as the entrance to Alaska by way of Valdez. Then by roads or frozen streams to Norton Sound, to Nome. Bering Strait may be crossed either on the ice or by steamer. In Asia the route may be either by land or by way of the ice along the shores of the Arctic Ocean, through 5,000 kilometres in Siberia, following the Lena River, passing through North Siberia to Irkutsk; thence to Paris by the route of the Trans-Siberian Railroad to Moscow, St. Petersburg, Berlin, and Aix-la-Chapelle."

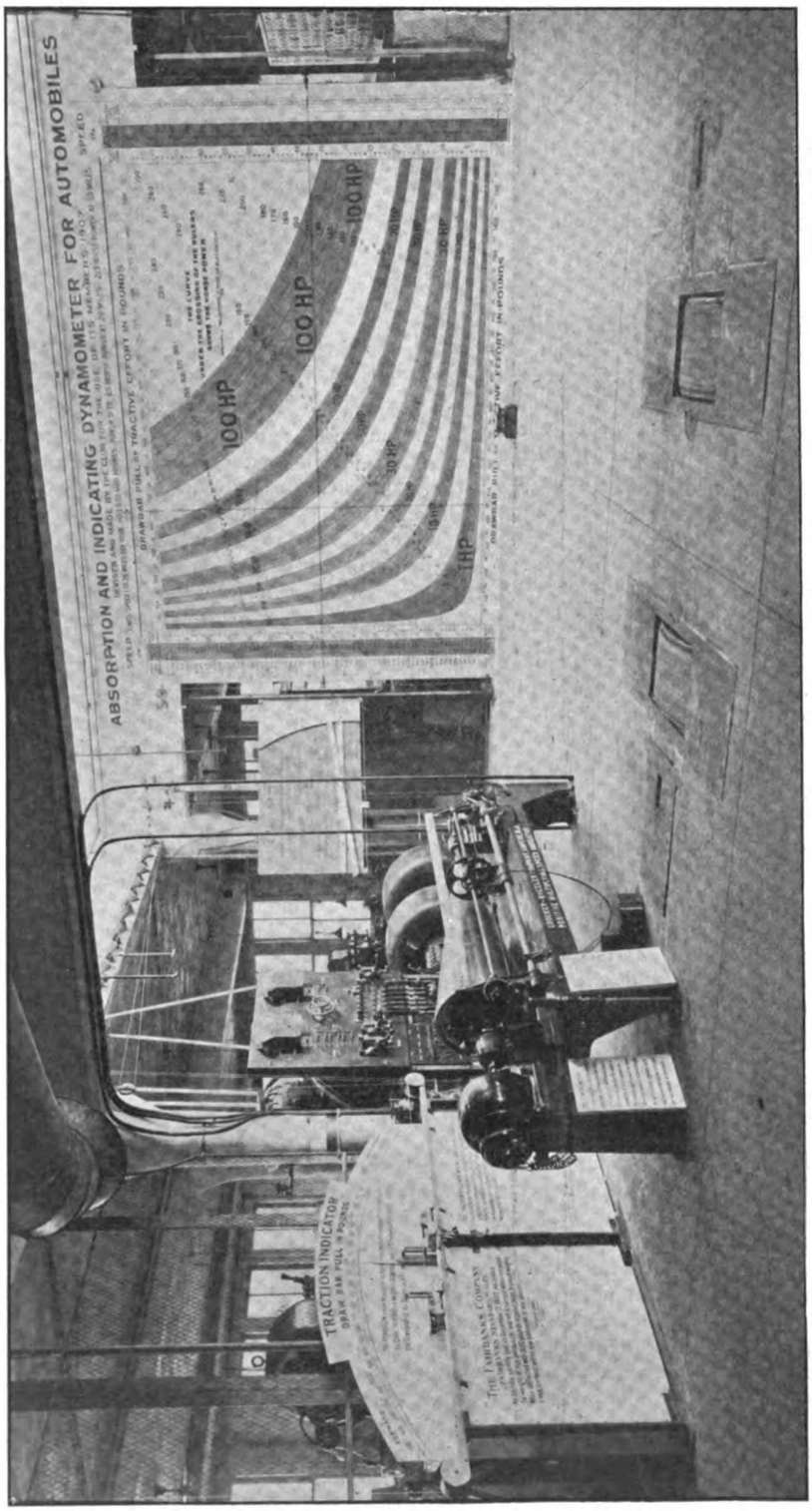
The start is to be made between February 10 and 15 from Times Square, New York. In traversing North America the speed laws of the various localities will be respected, it is announced, so that the contest will not partake of the nature of a speed race. In anticipation of none of the contestants reaching Paris, the promoters, scenting probable failure, have "cast an anchor to windward" by providing that the cup which is offered shall go to the car which succeeds in getting farthest from New York.

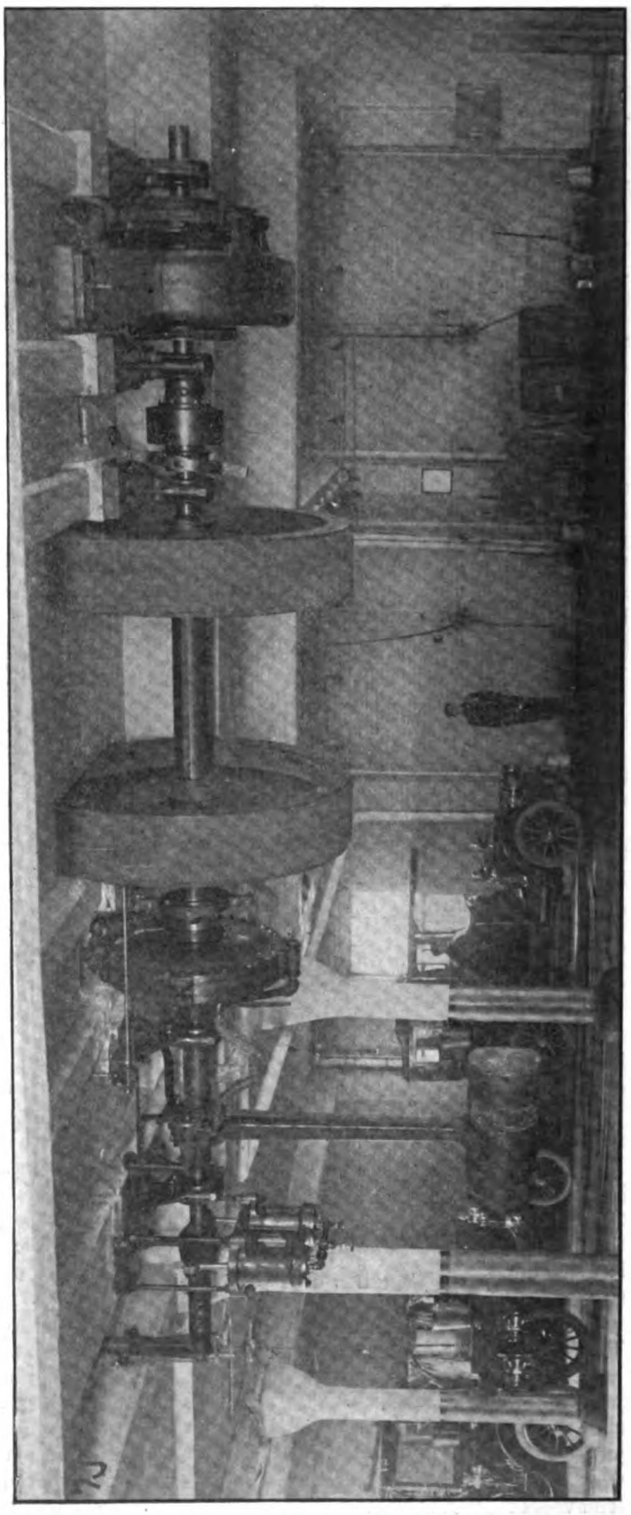
Rioters Routed by Automobiles.

Whatever may or may not be done with automobiles in war they have had a satisfactory test in dealing with a riot, which is war in miniature. This was at Muncie, Ind., on Saturday, 4th inst. Muncie, in common with several other cities in the Hoosier State, has a street car strike in progress, and on the day mentioned it developed riotous features. The traction company was for having the militia called out, but the police and deputy sheriffs said that with the aid of automobiles tliey expected to be able to get along without troops.

They did. It was in outlying sections that the automobiles were brought into play. Six of the vehicles were loaded with special officers to patrol the outskirts of the city. Mobs that had gathered in Congerville and Macedonia were quickly dispersed.

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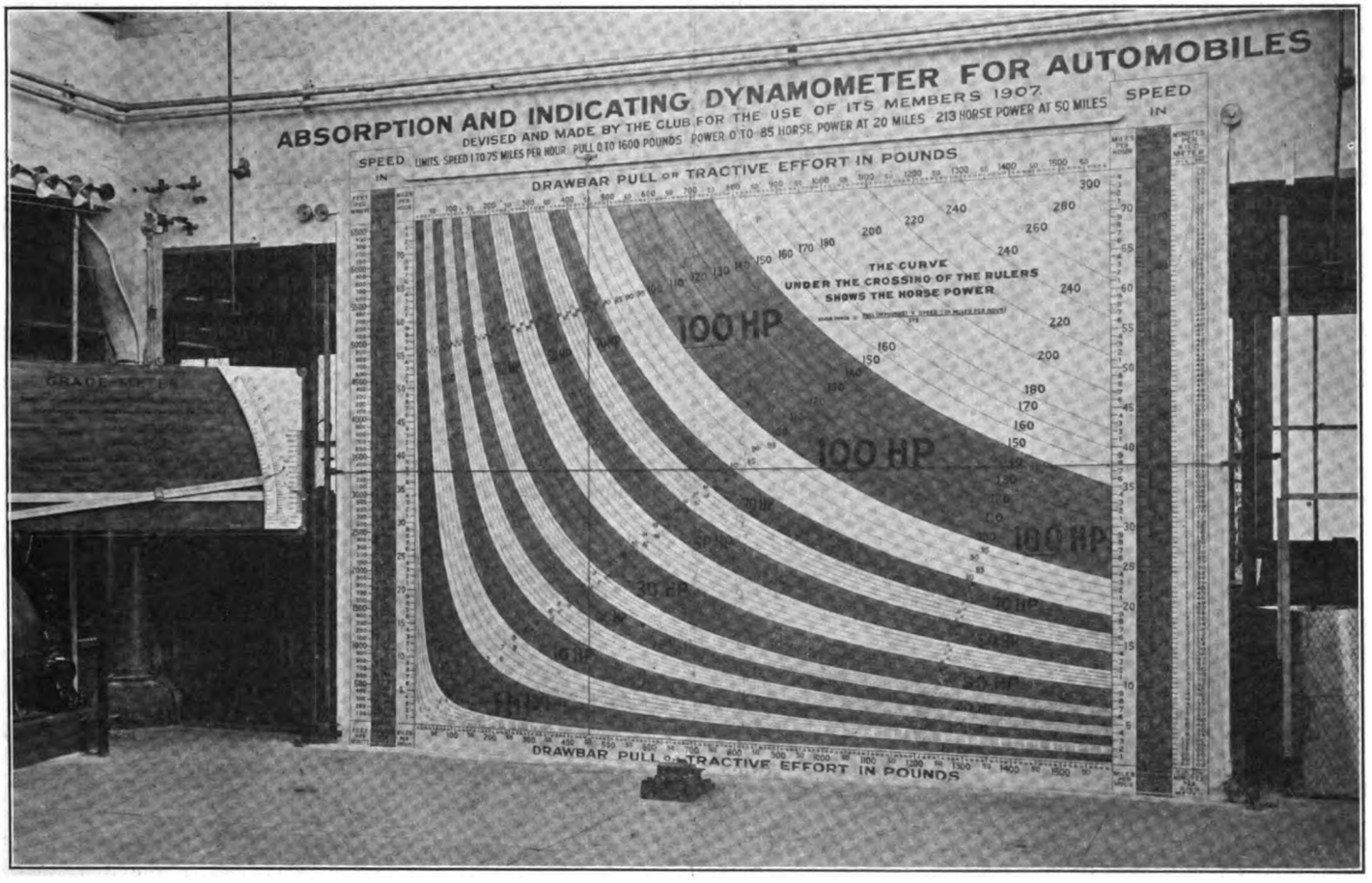




A. C. A. Dynamometer and Operating and Indicating Apparatus.

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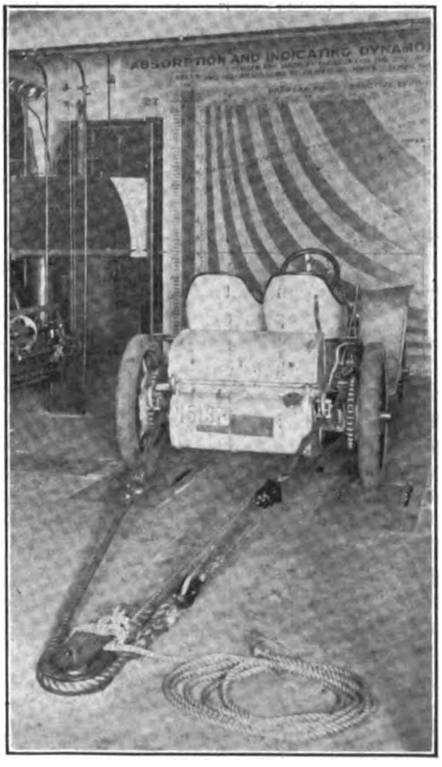
A. C. A. Sets Up Imposing Plant to Test Car Capacities



INDICATORS SHOWING COMPLETE RESULTS OF TESTS

After more than three years of patient development the Automobile Club of America has produced what with apparent right is claimed to be beyond question the most complete and efficient car dynamometer in existence. The plant, representing a cash outlay of something like $10,000, is the invention of Dr. Schuyler Skaats Wheeler, first vice-president of the club and an engineer of the highest standing, and has been built under his supervision as chairman of the building committee. Although announced prospectively in May, 1905, when the plans for the new club house were first made public, the dynamometer has only just been completed, its first official trials being consummated Tuesday of this week in the presence of a number of guests of the club, newspaper representatives and others, at its palatial quarters.

The opportunities for inspecting the device offered at that time were most excellent, a full set of working drawings of the dynamometer being laid open for inspection in the grill room, while the apparatus itself, which is placed in a wire enclosure of the repair shop on the top floor of the club house, on West Fifty-fourth street, New York, though extremely intricate, was made thoroughly understandable



CAR UNDERGOING A TEST

by the legends attached to the various parts as well as by the oral demonstration given in connection with the several tests which were carried on. Dr. Wheeler himself conducted the trials after explaining the principal points of the system, while former Presidents Dave Hennen Morris, A. R. Shattuck, and Gen. George Moore Smith, of the building committee also were present.

Some idea of the completeness of the dynamometer may be gained from the statement that it is capable of measuring and recording directly the speed of the car under test, the draw bar pull or tractive effort, the horsepower delivered at the tires, the grade climbing ability and the power of the brakes. But its most significant merit is that it is capable of integrating these values by mechanical means, thus affording the exact results at every instant of the test and without the necessity of any calculation whatever on the part of the test crew. In this respect it is probably the most complete arrangement of the dynamometer class ever devised.

In principle it comprises merely a couple of tread rollers on which the wheels of the car are placed and which are mounted in such a way that the machine may be driven

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into position over them under its own power, the tops of the rollers projecting only a very little above the level of the test floor. When anchored against both forward and backward motion, the complete tests as above outlined may be performed at once. Up to this point, the system may be said to resemble that employed in the dynamometers used both in automobile and locomotive testing up to this time. The particular novelty which it possesses is confined to the fact that the usual draw bar mechanism for measuring the actual pull of the vehicle, is done away with the anchors at both ends being fixed, and the actual pull being calculated from the torque of the dynamometer shaft itself, thus simplifying the mechanism without, in this case complicating the result in any way.

The shaft carrying the two dynamometer

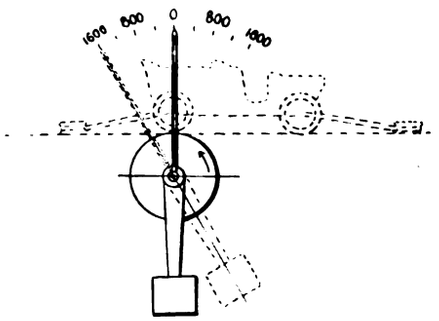


Fig. 1

rollers is mounted in brackets suspended from the ceiling of the floor below the test room and is connected by means of friction clutches with either of two other shafts in the same line, one of which is mounted at either end. That upon the right, looking toward the front of the car under test, carries an electric motor which is used in testing the braking power of the car, while upon the other side is mounted the dynamometer, proper which consists of a special form of hydraulic brake, the stator of which is connected with a heavy pendulum weight which is displaced through a small angle as the rollers turn, as in Fig. 1. The motion of this pendulum is transmitted to an arm above, which moves across a scale showing the draw bar pull in pound readings, the deflection being in either direction according to whether the car is being driven forward or backward. By means of a very delicate electrical contrivance, the motion of this pendulum indicator is made to control the motion of a small electric motor which through a cable drive causes a vertical tape to move across the horsepower chart at the front of the room. The position of this tape with regard to the scales over which it passes thus records the exact draw bar pull at any and every instant during the progress of the test.

For determining the speed, which is the only other variable element entering into the calculation, a special device is used which, though somewhat roundabout is nevertheless extremely accurate. Two elements are utilized in calculating the speed whereby the errors possible with any fixed scale are eliminated. In the first place a long steel cone of exact taper is mounted accurately and driven at stated speed by a small electric motor under the control of a sensitive hydraulic governor, as in Fig. 2. To enable the speed of the roller to be checked with absolute certainty a bell is made to ring at the end of every hundred revolutions, so that at the normal speed of 200 r. p. m. the bell rings every half minute. This arrangement as described, it is to be understood, serves mere-

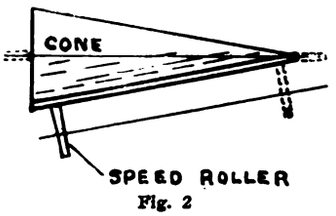


Fig. 2

ly the purpose of establishing a standard of time.

The second element of the timing device consists of a second shaft arranged parallel to the surface of the cone and driven from the dynamometer at a speed which is always proportional to that of the rollers. Mounted on the shaft is a contact wheel touching the cone, which may be slid back and forth along a spline on the shaft. By means of a small electric motor its position may be altered by moving it along the cone in either direction. The control of the motor is vested in a relatively simple system mounted in the wheel or speed roller itself whereby if the speed of the roller is not the same as that of the cone at the point where it makes contact the roller is moved along the cone until it comes to a point where the surface speed of the cone and the surface speed of the roller are the same. This axial movement is, of course, produced by the small pilot motor, current to which is controlled by the contacts on the speed roller itself.

In this way the speed roller automatically seeks out a position on the cone which is traveling at the same rate of linear speed. But the angular speed of the cone being an absolute constant, the distance of the roller from its apex forms an accurate measure of the rate of speed of the dynamometer, or, in other words, of the car under test. The movement of the speed roller along its shaft being communicated to the chart by means of a second system of cables, causes a horizontal tape to travel up or downward, thus indicating the speed on the proper scale.

In this way the two indicating systems automatically seek out on the chart the rates of draw bar pull and speed corresponding to the power being developed at the wheels of the car at any instant. The chart being drawn in the shape of a horsepower diagram with speed and drag as variables, it is evident that the intersection of the vertical and horizontal tapes must indicate the horsepower curve corresponding to the power, as in Fig. 3.

A supplementary device, which is fully up to the measure of the others in the way of theory, is the grade meter which is arranged to show directly in angle and in percentage, the grade which the car could climb under any condition recorded on the chart, neglecting wind and road resistance, and assuming that the driving wheels do not slip. The indicator is based on the principle that the sine of the grade angle is equal to the tractive effort divided by the weight of the car. The grade meter itself is nothing more nor less than a weighing balance in which the drawbar pull is measured by the position of a scale beam weighted by a pein which is placed in a position on the beam to correspond with the weight of the car. The angle of the beam

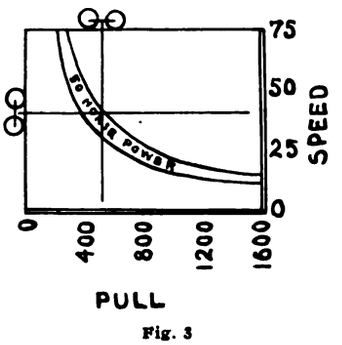


Fig. 3

causes the pointer on its extremity to record the angle of the theoretical hill.

By connecting the electric motor, which is on the other end of the dynamometer shaft, the transmission friction as well as the braking power of the car may be tested. A special motor generator is used to deliver current of any desired strength to the motor, which thus drives the wheels of the car under test. The switchboard readings then give the power being used in driving the mechanism of the car, an ingenius method of labeling the switches indicating at once whether the car is absorbing power or is giving it up to the electrical system according to whether positive or negative readings are given by the instruments. By applying the brakes under these conditions, the amount of retardation possible may be observed, while by reversing the direction of motion of the dynamometer, the braking power may be tested for backward as well as forward motion of the car.

The first car to be officially tested on the new plant was a 25 horsepower Pope-Hartford belonging to the club. The showing made was most creditable to the machine, the maximum power developed on third speed, being equivalent to the rated horsepower, which, as the power shown on the chart is the output delivered at the rear wheels and not the nominal figure ordinarily catalogued, proved that figure to be a conservative one. By way of illustrating the range of the testing plant, the full observations for each of the three forward

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speeds are appended, as read directly from the board.

	First speed.	Second speed.	Third speed.
Speed in miles per hour	15	25	36
Drawbar pull in lbs.	510	340	270
Horsepower delivered at rims of driving wheels.....	20	22	25
Equivalent grade in per cent.	20	14	11

Subsequently W. K. Vanderbilt Jr.'s 90 horsepower Mercedes racer of Ormond fame was put on the rollers and raced madly on the low gear, the engine proving so powerful that with the water pressure then available from the storage tank on the roof it was impossible to brake it down to its full power. It was announced parenthetically at this time, that a new pump yet remained to be installed before the plant would be quite complete. On the high gear, the same car developed 75 miles an hour, while delivering a little short of 50 horsepower. A Westinghouse car was tested later, and did well on the first and second speeds, but failed on the high gear owing to overheating because of the inadequate cooling of the small fan placed in front of the radiator.

Another test, introduced by way of illustrating the utility of the brake, was that of a speedometer, which was tried by running the front wheels of the car on the rollers while the latter were driven electrically, the readings of the instrument being checked against those of the speed indicator on the great chart.

The arrangements of the plant are complete in every way save for a few minor details which remain to be smoothed over. And from the huge swinging exhaust pipe, through which an exhaust fan carries off the motor waste, to the certificate of the exact mass of the pendulum by the Fairbanks Morse Co., evidence is given of a tremendous outlay of pains and skill to make the system one of unexcelled exactitude and creditability—an effort in which has been most successfully rewarded.

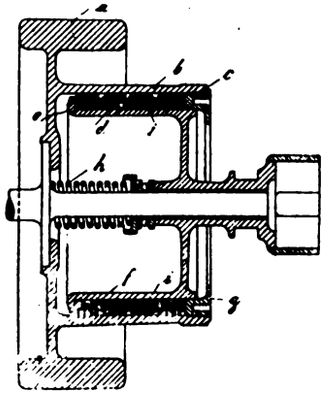
Increasing Use of the Clutch Brake.

One of the "little things" in the constructional line which go such a long way toward improving the general performance of the machine without at the same time altering its principal features in the least, is the adoption of the clutch brake. This is growing more common every year and in the course of time will likely become almost if not quite universal. No matter how well designated and made, there are times in the life of every clutch when it will refuse to release as promptly as it should, or when, for some perhaps inexplicable reason, the clutch shaft continues to spin after the clutch has been released and at such a rate as to prevent gear changing without braking the gears by burring together the ends of the teeth. The use of the clutch brake obviates this entirely making it possible to shift the gears "sweetly" on all occasions.

NOVEL SELF CONTAINED CLUTCH

Combining Principles of Both Ring and Cone Clutches It is a New Departure —Details of Its Construction.

An exceedingly novel development of the multiple ring clutch idea embodying at the same time the advantages of the wedging action possessed by the cone type, is the recent invention of August Horch of the Saxony firm producing a car of the same name. Briefly, it comprises a large number of split rings of triangular section which are contained in the annular cavity formed by two telescoping drums, one of which is



formed integral with the fly wheel and the other as the secondary or driven member of the group. Forcing the two drums toward one another axially, serves to crowd the rings together, thereby spreading them and forcing them outward and inward against the drum surfaces, which thus are locked together.

The general scheme will be seen from the illustration here shown, which is a plain half-section. The sleeve or drum, b, is mounted on the fly wheel, a, and has an internal screw thread, c, at one end. The drum, d, fixed to turn uniformly with the driven shaft and carrying the flange, e, is inserted within the first mentioned drum leaving a space between them in which the rings, f, are placed. The rings being split and properly abutted, any end pressure brought to bear upon them must serve to expand them both outwardly and inwardly against the two confining surfaces. They are retained in position by means of the junk ring, g, which is screwed into the drum, b.

The clutch is of the self-contained pattern in so far as actuation is concerned. That is to say, the helical spring, h, serves to press the drum, d, away from the flywheel, but compresses the rings, owing to the presence of the permanent ring, g. The method of actuation may be the same as with the ordinary type of cone clutch, the usual forked yoke being connected with the pedal in the usual manner. By proportioning the angles of the sides of the rings properly, it is evident that a very gradual engagement may be secured, while at the same time, the clutch will be unlocked by the very action of the driving torque so soon as the end pressure is released from the group. The arrangement permits the use of a large amount of working surface in the clutch and admits of good lubrication by splash, since the drums may be made oil tight, and there is little in the way of mechanical complication, despite the fact that a very great number of rings may be employed upon occasion.

Knocking Traced to Unusual Cause.

A most unusual source of knocking in the motor is reported by a Western dealer handling a well known line of popular priced cars which are fitted with horizontal opposed motors. Several different machines had developed the same mysterious sound without apparent provocation and not until one of them was dismantled and carefully inspected did it appear that the noise was caused by the slapping of the piston against the cylinder wall at the rear end, the bore proving to be larger at that point than at the crank end. At first it was thought that the trouble was due to some inherent difficulty in the cylinders themselves. Subsequent investigation, however, revealed the fact that in grinding in the valves, the mechanics were not sufficiently careful to prevent the surplus emery from working into the cylinder. The effect of this carelessness had been to grind off a very appreciable amount of surface from the under side of the bore.

French Car with Belt Transmission.

Ordinarily the use of the belt transmission in motor car propulsion is considered too antiquated and inefficient for serious regard. It is a matter of no little surprise, therefore, to find that a commercial vehicle is even now being built in France in which this feature is employed regularly. The machine in question is the Pantz, which is made in 1½ and 3½ ton sizes, with motors of 9-11 and 12-15 horsepower, respectively. In these vehicles, the motors are mounted horizontally under the footboards, while the change gear box is located in the rear, driving the wheels through very short side chains. The connection between the motor and gearset is by means of a crossed belt which thus is made to run nearly the entire length of the chassis. The maker of the Pantz is among the oldest builders of commercial vehicles in France, and his product is said to have a good record of performance.

Careful drivers generally make it a practice to declutch at the instant of crossing a "hump" in the road, to relieve the strain upon the car by checking the driving force and allowing its momentum to overcome the extra resistance which the obstruction presents. When this is done skilfully and the clutch again engaged before the machine has fully recovered, it is found that the shock experienced by the passengers is materially reduced.

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ABOUT MANUFACTURERS' AGENTS

Varied Phases of Their Business Character —Some Indeterminate Factors in the Value of Services.

For a business requiring no other capital than enough to pay office rent and railroad fare, and partaking of the nature of a free lance disposal of personal services, that particular line of endeavor known as being a manufacturers' agent is perhaps unique in the automobile trade. Not but what the manufacturers' agent is not a familiar figure in other lines of business as well, because he has of late years become a well recognized institution, but in his activity in the merchandising of automobile parts and accessories he presents some interesting phases.

No discounts or commissions are yielded more grudgingly than those to the manufacturers' agent because of the difficulty it creates with the jobber unless it be known positively that the agent is on a salary basis and is not enjoying an under discount. It is one of the first principles of a jobber's buying to insist on the lowest price that is made to any one and the fact that a manufacturers' agent can sell on commission is taken as prima facie evidence that the price could be lowered.

On the other hand, the manufacturer is reluctant to enter upon a salary arrangement with the agent since he has no control over his time and can by no means be certain that the agent's efforts will not be devoted more ardently to those of his lines which give a profit according to the amount sold.

Yet the manufacturer who comes into the automobile parts or accessory field comparatively unacquainted with the personnel of the trade and the intricacies of its policies and arrangements, is peculiarly susceptible to the arguments of the manufacturers' agent as to the importance of the latter's services. Needless to say such representations as to the ability of the agent to create a market for the manufacturer's goods and place them favorably in the trade are often greatly overstated, while again some of the most successful and satisfactory agents are strangely diffident in their views as to what they could do for a prospective client.

When the agent who is soliciting an account evinces any overwhelming degree of enthusiasm and paints glorious pictures of the immense volume of sales he is sure of making if the manufacturer will entrust the large end of the selling to his tender care, it is well for the manufacturer to give a show of insistance on a commission arrangement as the only one he would consider. If the agent jumps at the chance the manufacturer can reconsider or name an impossibly small commission, or discount, if it be his real intention to avoid giving his agent a commission. The commission proposition, however, will serve to test in some degree the genuineness of the agent's mental visions of big sales.

Not a few manufacturers who have angaged the services of so-called manufacturers' agents at high salary figures have found that they picked the wrong man, and that the agent's time was largely spent in soliciting still other manufacturers for accounts on a salary basis, so that instead of his being active in the sale of goods he was simply swelling the multiplicity of his salary sources.

"I don't believe he did more than an hour's pushing of our goods during the whole season," said one manufacturer recently, in describing his troubles with an agent, who had talked him into a salary contract with the persuasion that it was the road to fortune. "If that fellow had used the same power and eloquence in pushing our line that he did in talking about himself, in a year we would have been the biggest people in the business."

Even the commission system does not give the manufacturer any guarantee of hard work on the part of the agent. Some of the less scrupulous of those posing as manufacturers' agents have in the past been known to enter upon as many commission arrangements as possible, for as wide a range of articles as they could get. Having secured contracts by which they would get a "rake-off" on all sales in certain territories, they have calmly waited in their offices for the commissions, knowing that out of the large number of things covered by their contracts a certain proportion were bound to prove successful and enjoy a big sale, without effort on their part. Nor would they hesitate at the end of the season to "point with pride" to the conspicuous successes on their list despite the fact that their contributions to such results were nil.

But the unfortunate experiences various firms have encountered in dealing with agents who do not attempt to "deliver the goods" are offset by the valuable and satisfactory service which many of them have had from manufacturers' agents who have taken a broad view of their field and responsibilities and who have also been equipped with the personal acquaintance, the knowledge of the trade and the selling ability that would enable them to perform what was expected of them. Many a manufacturer has felt the benefit of relying upon the experience and judgment of his agent in making his introduction into the market and in determining his policies in relation to the trade. With a list of several of the big firms in non-competing lines, an agent can give to each one the advantages of the sum of his knowledge gained from doing business for them all, having a wider view than the men devoted to one particular line.

To measure exactly either the direct or the indirect results of the agent's work where he has a hand in the promotion of the business naturally is a most difficult matter except in specific cases where certain definite tasks are set. If a manufacturer having failed to get his goods handled on a satisfactory basis by this or that particular house, entrusts the negotiations to the agent and the latter succeeds in straightening matters out, it is easy to see the nature and success of his work. Similarly, if in seeking to close an equipment contract with an automobile manufacturer the agent is able to swing the deal, there is again definite evidence of his value. But in the general results of his ordinary work it is extremely difficult to judge, especially where he works among the jobbers.

It is safe to say that the agent who takes the mysterious attitude and seeks to convey the impression to the manufacturer that he can exercise a mysterious hocus-pocus or hypnotism on the trade, which his client must not attempt to inquire into or understand, is bluffing to some extent. If the manufacturer needs trade advice and the assistance of a selling agent, his safest plan is to select the man who can turn to such clients as he has and has had, for reference, and whose proposals for pushing the manufacturer's goods have in them the element of conservatism and sound sense, with the compensation in some manner proportioned and contingent upon the degree of subsequent success.

American Chassis Popular in Sweden.

Stockholm and in fact Sweden are attractive fields just now for the cultivation of American manufacturers of automobiles, says the American Exporter. A certain prestige may have been gained by the fact that the motor cabs recently introduced on Stockholm streets came from America, at least so far as the chassis is concerned—bodies were built locally. There are about forty-five motor cabs now at work, the greater part of them of the above description, and it is said that the number is soon to be increased. They are giving satisfaction, though the bodies that were made for them are both ugly and awkward. Two or three other makes of American automobiles are on this market. Complaint is made that sales are slow, but then the whole question of motor cars is very young yet in Sweden. It is estimated that there are not more than 500 motor cars in Stockholm, plus about 300 in all the rest of Sweden. Swedish manufacturers in this line are doing little as yet beyond the production of a few freight trucks that are quite popular in Stockholm, and reported to be satisfactory in service.

Police Chief Asks for Automobiles.

Automobile patrol wagons will be added to the equipment of the police department of Cleveland, O., if Chief Kohler can have his way. Among a number of recommendations made in his annual report is one for several of the now widely approved vehicles.

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PROBLEM OF WHEEL DIAMETERS

Their Adaptation to Service as Governed by Resistance, Strength and Vehicle Mounting—Curious Extremes.

A subject for constantly recurring discussion and one which is bound to come in for more serious attention in the future than it has even in the past, is that of wheel diameter as related to questions of tractive resistance, motive power, and strength. At the present time and in American motor vehicle practice, wheel diameters vary from 28 to 54 inches—the first applying to light vehicles of the runabout type and the last to road tractors of a single make. More generally, the average size of the road wheels of touring cars has been increased from 34 to 36 inches for machines of high power and weight within a couple of years, and the change has proved beneficial. In the high wheeled buggy, is found a most important exception which is being seized upon by numerous advocates of the high wheel principle as an illustration of its advantages.

What then are the advantages of the high wheel as compared with the low, and what factors may be considered as limiting wheel sizes, all ordinary considerations being taken into account? The question has been thrashed out over and over again in other lines, from the case of the horse-drawn vehicle itself, down to the locomotive, which also partakes in some measure of the elements which the motor car designer must take into account. At present, the trend of automobile design is backward, that is to say toward the high wheels which were used on the earlier types of pleasure car. This backward swing of the pendulum is to good purpose, however, and answers directly the demand for better resiliency and longer tire life, quite as much as any inherent advantage accruing from the use of the high wheel. As the use of smaller wheels followed the adoption of the pneumatic, and was in obedience to the demands of economy, moreover, it is evident that tires have been the moving cause both in getting away from, and again approaching the high wheel. The question of wheel size, then, appears to have been but little considered thus far as a problem by itself.

Considered mechanically, that is, with regard to its smoothness of action and otherwise as affecting the vehicle merely as a carriage, there can be no doubt of the advantage of the high wheel. The greater the wheel radius, the nearer the approach of the circumference to a straight line, and so the less its affection by ruts and other depressions or obstacles in the road. To put it another way, the smaller the obstacle the less the power required to pull the wheel over it. So, the greater the size of the wheel, the less the power required to pull it over an obstacle of given size. The relative conditions are exactly the same. Hence, the large wheel is adapted to run more uniformly over a given surface than the small one, and, other things being equal, is superior to it.

At the same time, the greater the diameter of the wheel, the higher must be its axle from the ground, and while up to a certain point, this creates no disadvantage, the raising of the centre of gravity thus brought about must, in time, become a menace to stability. With the light motor buggy, and with the very heavy tractor, one of which carries but a small load, while the other carries its load at only a snail pace, even a very high center of gravity is permissible. Where higher speed and load factors are considered, however, it is not, at least with the present standards of wheel gauge, and so with the increase of wheel sizes beyond the present maximum standard of 36 inches, it must be necessary to adopt new methods of suspension in order to lower the body. This may be done either by cranking the axles liberally, and doing away with the live rear axle construction in present use, or else by adopting some such method of under suspending the frame as was suggested recently in these columns.

In the matter of strength, of course the high wheel suffers by comparison, yet not so much as would at first appear to be the case, owing to the fact that considerably more dish is possible without resorting to excessive cambre with the high wheel than with the low. In this way, the high wheel may be made of relatively greater strength in regard to transverse strains than the low and without distorsion. In the matter of resistance to dead load and torsional strains, however, it must be weaker, or, what is the same thing, for the same degree of strength it must be made proportionately heavier.

Considering the question of wheel sizes as applied to the driving or power side of the equation, it is evident that in the first place with two vehicles otherwise alike, but having wheels of different sizes, the power required to drive them must be about the same, that is solely with regard to the mechanism. The increased inertia of the larger wheels may have a slight effect, and the fact that for the same vehicle speed the larger wheel must turn more slowly than the smaller, is of tremendous importance. It means in a word, that the gearing ratio must be much greater in direct proportion to the increase in wheel diameter which, unless it be possible to develop high and uniform motor torque at very low crank shaft speeds, means the continuance of gear reductions and the elimination of the hopeful prospect of absolute direct drives in the event of a general adoption of the high wheel.

Coming to the more important question of the actual differences in power absorbed by large and small wheels, the smoothness of action of the high wheel mentioned above, implies correctly, a reduction in rolling friction which, according to the time-honored theories of General Morin, is held to be independent of tire width within nominal limits. The draw bar pull must decrease slightly as the wheel size increases then, regarding only the element of rolling friction. The factor of windage, however, which is of very great importance at high speeds, must be greatly affected by the raising of the vehicle from the ground, but may be compensated for to some extent by the development of low suspensions.

The cost of the high wheel system as compared with the low must be greater at present because of the necessity of developing new methods of springing, new designs in other respects, and also to a very slight extent, because of the greater amount of material used. Ultimately, however, it may be brought down to a par with the cost of the type in present use, should it prove desirable. Roughly speaking, the cost factor is the last to be considered in this connection, since tire life increases with the increase in wheel size, and lower maintenance compensates for increased first cost, judging on the tire basis alone.

The entire question of the determination of the proper wheel diameter then appears to hinge about the method of chassis mounting. The present high wheel developments in the two extremes of very light and very heavy vehicle service, are seen to be rational within their present limits. But whether they prove to be forerunners of a high wheel era of universal adoption, must depend very largely upon fashion in design. It would hardly seem that the gain brought about by the use of very large wheels, say of more than 38 inches diameter, would be sufficient to warrant the complete overthrow of present methods of suspension and axle construction. Certainly, the advantage of the large wheel is not sufficient in itself to warrant the adoption of the solid tire under present conditions of suspension, and so the matter largely reduces itself into a resolution of the suspension problem into its lowest terms. Pending that, all developments toward very large wheels must be viewed in the light of experiment, as applied to vehicles of moderate load capacity and high speed attainments.

Bearings with 30,000 Miles Record.

Since performance is much more convincing than promise, the Wm. Cramp & Sons Ship & Engine Building Co., of Philadelphia, is issuing souvenir postal photographs of a set of Parsons' white brass bearings which have had 30,000 miles running in a Packard car. The picture makes it evident that the bearings were in perfect shape in spite of so great a mileage, further testimony to the same effect residing in the fact that after having been "taken" by the camera they were replaced in the car for continued service without it even being thought necessary or desirable to scrape them.

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CALIFORNIA WANTS FIRE FIGHTERS

Seven Cities Arranging to Purchase Automobile Apparatus—How Motors are Started Without Cranking.

Seven cities of southern California are ready to begin negotiations for the purchase of automobile fire engines, now that the two Rambler cars, specially built and equipped with fire-fighting apparatus by Thomas B. Jeffery & Co., for the city of Long Beach, have proven so efficient.

Long Beach was the first city on the coast to order motor fire engines. The cars were designed at the Rambler factory in Kenosha, Wis. They have 40 horsepower motors, a speed of 30 miles an hour is possible, and they will carry 800 feet of 2-inch jacketed hose, a 35-gallon copper chemical tank and 200 feet of 2-inch chemical hose. Space is provided for buckets, hooks, several short ladders, axes and four men.

In competitive test between a Rambler car and the old horse-drawn apparatus, made before the order was placed, a short run of 3880 feet was arranged. Every one, except the Rambler man, put his money on the horses. The auto was to start with a dead engine. The Rambler won, making the distance in just two minutes flat. Immediately it was decided to replace all horse-drawn vehicles with automobiles.

Since the cars were installed the Rambler agent has invented a tilting incline platform on which the car stands level when housed. At the sound of the alarm, the driver springs to the seat of the car and drops a hook which releases the chain securing the platform. The platform tips, the car glides down, the engine starts itself and the race to the fire begins without the loss of a second's time.

Motorphobic Magistrate Under Arrest.

For the first time in many months automobilists on Monday of this week drove through Magnolia, N. J., without fear of arrest for exceeding the prescribed speed limits as ordained by the State motor vehicle act. Farmers and residents driving by smiled as they drew their teams to one side to let the motorists pass for they realized that they were enjoying a pleasure that hal long been denied them. For C. Folk Klein, Justice of the Peace at Magnolia, and long a terror of automobilists who use the White Horse pike, was in the Camden county jail, arrested on a writ of the circuit court for failure to satisfy a judgment issued against him.

Klein first came into the public prints when he arrested and fined James P. McNicholl, a Philadelphia contractor and politician, for speeding, and was the justice upon whom the contractor perpetrated the joke of bringing down to Magnolia five cars of one make and challenging the "Squire" to pick out the one in which the violation of the law had been made. It is said that that was the only time that Justice Klein ever reversed himself, for he returned the fine of $13.75 which he had levied.

Residents of Magnolia say that Klein had taped off a half mile stretch of road in front of his office over which he timed automobiles that drove past. He was helped in his work by one "Thad" Miller, who held up the cars when Justice Klein waved his flag. Sundays were always harvest days for the Magnolia justice and there was always a waiting line in front of his legal parlors. Klein got himself thoroughly disliked some time ago by advocating that the village of Magnolia hang steel gates across the highways, so they could be let down in front of any automobile that he considered violating the speed law.

This historical resume, however, has nothing to do with the case in point, which is that until the justice is released from jail, automobilists can drive by his place in Magnolia without fear of being haled before him.

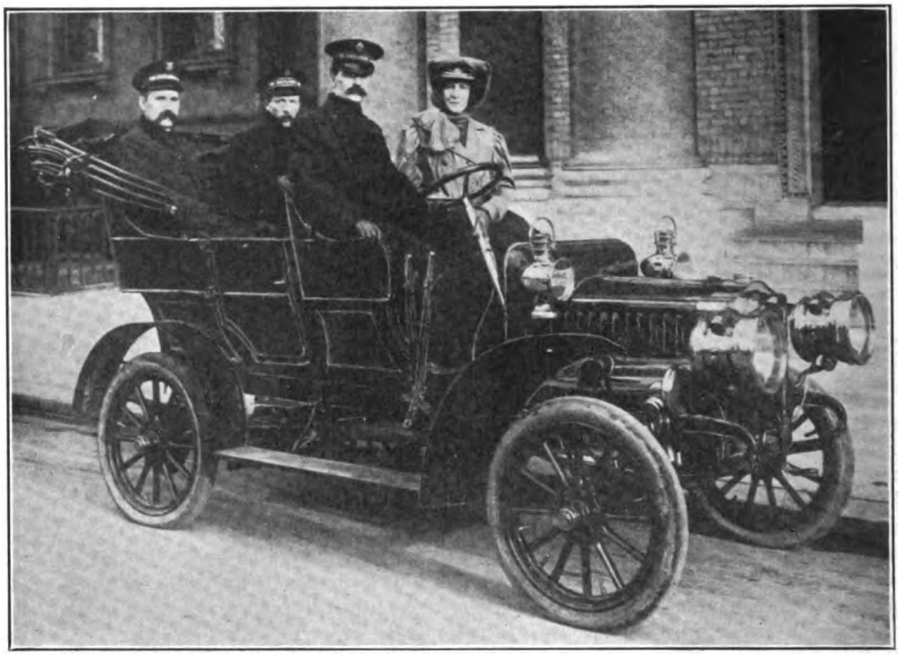
Lee Heads Bay State Association.

Elliott C. Lee, formerly president of the American Automobile Association, was on Monday elected president of the Bay State Automobile Association, to succeed Louis R. Spear, who has held the position for three years, since the association was organized; Mr. Spear declined re-election on account of business. Harlan W. Whipple was re-elected vice-president, as was Harry Knight, treasurer, and James Fortesque, secretary. The new board of directors will be composed of George McNear, A. P. Underhill, J. C. Kerrison, Dr. Julian Hovestadt and J. W. Maguire.

AUTOMOBILE FOR MISSION WORK

It Was a Providential Gift to Commander Evangeline Booth—Devoted to Salvation Army Service.

No slum or hovel is now too humble to have visitors call in an automobile since Miss Evangeline Booth, the American commander of the Salvation Army, was presetned with a Maxwel car. The machine goes anywhere that Miss Booth's duties direct, and needless to say it is busy most of the time. As shown in the illustration, she not only uses it herself but employs it to convey members of her staff, as well. The manner in which Miss Booth acquired the car bears testimony to the well wishing of her friends. It was awarded to her as the result of a puzzle contest conducted by a New York newspaper. While the Salvation Army leader herself was not a contestant, a great many of those who competed specified that if they won, the car should go to her rather than to themselves. The winner proved to be one of this number and accordingly the machine was turned over to Miss Booth with a felicitous presentation.



COMMANDER BOOTH AND HER STAFF

Total New York Registration in 1907.

In his first annual report to Governor Hughes, Secretary of State Whalen reports that in the twelve months ending December 31st, 13,980 automobile owners registered in compliance with the laws of New York, an increase of 2,331, and that 9,386 chauffeurs were granted licenses, an increase of 2,051. The fees received through the motor vehicle department amounted to $48,305, an increase of $10,810 over 1906.

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MAYOR PLANS BETTER REGULATION

He Recommends Changes in New York City Automobile Ordinances—Some Evils He Would Banish.

In his annual message to New York City's Board of Aldermen, sent to it on Monday of this week, Mayor McClellan pays considerable attention to automobiles. The Mayor's suggestions regarding the regulation of automobiles used on city streets are designed to correct present abuses and appear to be sensible and clearly stated. What New York has needed for some time is an ordinance regulating the charges on automobiles used for public hire, and the adoption of one by the Aldermen is one of the suggestions of the Mayor. He also recommends that the ordinance apply specifically to the so-called sight-seeing coaches and provide for their licensing, the same as applies to other vehicles. At the present time this class of vehicles does not pay any fee to the city.

The Mayor aims to prevent the use of siren horns on any cars used on the city streets except those employed by the Fire Department, as the siren horn has been adopted as the particular signal of the approach of apparatus and officials of the department and the indiscriminate use on other vehicles, the Mayor thinks, is apt to lead to confusion and possibly accidents. He has prepared an ordinance to regulate this, which will be presented to the Board of Aldermen.

Among the other evils that the Mayor desires to have corrected is the cutting out of mufflers on cars on the built up streets of the city; unnecessary smoke from exhausts, and the use of dazzling acetylene headlights within the city limits, the last named three suggestions being the most important.

The full text of that part of the Mayor's message relative to the regulation of automobiles, follows:

"There is no general ordinance in existence at the present time which specifically applies to the licensing of public automobiles. Under an order of the Supreme Court the Bureau of Licenses is now issuing licenses to such vehicles under the general ordinance relating to public hacks and cabs. This ordinance, however, was never intended in my opinion to apply to automobiles and fails to regulate their charges in proper fashion. I recommend, therefore, the adoption of an ordinance which will apply directly to these vehicles. At the same time I believe that some provision should be made for licensing all sight-seeing automobiles, which at present pay no fee whatsoever to the city.

"In this connection I also desire to call your attention to the necessity of preventing the use of sirens upon all automobiles other than those of the Fire Department within the city limits. The siren has been adopted as the particular signal of the approach of the apparatus and officials of the Fire Department, and its indiscriminate use by others results in confusion of traffic, which necessarily detracts from the value of such signal to the Fire Department. I have caused such an ordinance to be prepared for introduction in your board, and trust that it will receive your favorable consideration.

"I think it also most important that the following regulations should be adopted in regard to the use of all automobiles, both public and private, within the city:

"First—That all automobiles should be equipped with adequate mufflers, which never should be cut out within the limits of the built up portions of the city.

"Second—That, except for the first ten seconds after starting the engines of an automobile, no smoke should be allowed to come out of the exhaust pipe. It is wholly unnecessary and is simply an evidence of carelessness and incompetence.

"Third—That the use of acetylene headlights within the built up portions of the city should be prohibited. The use of these lights is very dangerous and has resulted in causing many accidents by dazzling pedestrians and drivers of vehicles coming in the opposite direction. These lights are unnecessary on the city streets, and I understand that responsible drivers of their own volition refuse to use them."

Elasticity of Multiple Disc Clutches.

One of the most advantageous features of the multiple disc clutch in contradistinction to the ordinary cone pattern, is its elasticity from the designer's point of view. By varying the number of discs in use the capacity of the clutch may be altered to suit any possible requirement, so that it is possible to use the same discs in the clutches applied to several different sized models. The same advantage also applies to corrections in clutch design found necessary after the trial model has been on the road for some little time. Furthermore, the fact that the discs may be made very cheaply and in large quantities adds to the advantages of the device.

Vehicle for Freight or Passengers.

A most plausible development of the commercial vehicle has just been introduced by a British manufacturer in the shape of a controvertible body suitable for carrying either passengers or goods. The sides of the top are normally closed and the vehicle takes the form of an ordinary luggage van. Upon occasion, however, the sides may be removed leaving a plain canopy top, while side seats may readily be installed in the interior. The machine is propelled by a 10 horsepower motor and in passenger carrying commission, is capable of accommodating eight persons inside besides two with the driver on the front seat.

MOTOR LINE ON TEXAS PRAIRIES

Automobiles Supersede Stages on a Forty-five Mile Route—Cowboy Chauffeurs Run Them on Schedule Time.

It wasn't Jules Verne who first thought of a motor stage line across the Texas prairies. R. C. Burns of Lubbock-in-the-Panhandle—big, tall, with cheeks blistered by the sun in spite of his wide brimmed gray hat—originated the plan and has seen it to a successful realization. Five automobiles now make regular trips on a three-hour schedule over the 45 miles between Lubbock and Plainview, the county seat of Lubbock and Hale counties. The line has a private right of way, with cattle guards across the ranch fences as if for a railroad, and a path is kept scooped free of sand. The chauffeurs are cowboys, attired in blue overalls and felt hats instead of the regulation motor costume. But though they are not mechanical experts they can push the lever to the last notch as well as any race driver, and not without reason, for they are required to make the 45 miles in three hours because the line carries the mail and is under contract to the government to keep that schedule. Often the mail arrives an hour early, but in only one or two instances has it been late.

Before Burns began his automobile line the traffic was carried on by stages. Lubbock is in the center of the Panhandle district, where many homeseekers are going and so has a brisk trade. The charge is not exorbitant, considering that the automobile line is the only means of transportation between Lubbock and Plainview. Burns's charge for the round trip of 90 miles is $10; he receives $50 a day for hauling the mail. One of the cars is used exclusively for handling the mails and express, and as a brisk trade is driven in the latter, the line has been most profitable to the promoter.

The line was formed only a few months ago when Burns purchased five 24 horsepower cars of a popular make, and equipped them with extra wide tires on account of the heavy sand. Then he ordered twelve extra shoes, twelve spare inner tubes, two barrels of batteries, twenty-four spark plugs and two extra transmissions. A completely furnished machine shop completes the equipment of the motor car road.

The line has been so profitable that Burns has planned to extend it to Big Springs, Texas, one-fourth of the way across the State. Burns is confident that he can make a "go" of it. Before the railroad ran to Amarillo his stage made a round trip of 220 miles between Big Springs and Lubbock, and as that was successful he figures that he can save money and get increased business by the adoption of automobiles in lieu of the old time system of horses and lumbersome stages.

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AUTOMOBILES AID STATE THRIFT

What They Have Paid Massachusetts in License Fees and Fines—Report of the Highway Commission.

Automobiles supply material for a considerable portion of the annual report of the Massachusetts Highway Commission for 1907, and among other things they are, of course, held to be largely responsible for the rapidly increasing cost of road maintenance which is alleged therein. The report says:

"The destructive work of automobiles during the past year was even more marked than it was in 1906. The Commission has made a careful study of this problem, both in Massachusetts and in neighboring States." During 1907 some roads were treated with a preparation of tar, and regarding this work the report says: "It is hoped and believed that these methods of treatment will eliminate the dust and prevent ravelling of the surface at a cost that is not unreasonable." The Highway Maintenance Fund," derived from the re-registration of automobiles in the summer, amounted to $43,616.43, and it is believed that an equal or larger amount will be derived from the re-registration now in progress. The Commission asks that the Legislature appropriate from this fund as early as possible in the session, as much preliminary work must be done in the spring. The Commission recommends an appropriation of $75,000 for special treatment made necessary by automobile wear.

The report shows that during the year the commission received $92,091.50 from its automobile department work, this being in fees for registration and re-registration of motor vehicles and for licenses for operators. Under that part of the law requiring that courts and trial justices keep a full record of every case in which a person is charged with a violation of the automobile acts and send an abstract of these records to the Commission there were received 1,112 abstracts. These indicate that during the year 1,026 persons were convicted of unlawful automobiling, 65 appealed, 41 were found not guilty, 106 complaints were placed on file, 12 were nol prossed, and in 12 the defendants defaulted. Among the causes of conviction were: Over-speeding, 604; reckless operating, 19; operating while intoxicated, 5; improper display or lack of register number, 67; operating without carrying license, 127; operating without carrying registration certificate, 28; operating an unregistered motor vehicle, 7; refusing to stop when signaled by officer, 12; operating with unlighted lamps, 54; operating without numbers on lamps, 108; violation of park rules, 91; miscellaneous offenses, 24. The total amount of fines reported to have been paid on account of improper automobiling is $11,560.21.

The Commission revoked twelve licenses and six registration certificates for reckless operating; five licenses and two certificates for operating while intoxicated. Fifty-five complaints of careless or reckless driving were heard and twenty-six licenses and five certificates were suspended or revoked in addition to those above mentioned. The total number of licenses and certificates suspended or revoked was fifty-six. Concerning this aspect of automobiling the report says:

"There seems to be a growing sentiment throughout the Commonwealth that the safe and sane operating of these vehicles can best be accomplished by filing with the Commission complaints against careless or reckless operators, with the purpose of suspending or revoking the licenses of such operators. There is a weakness in the present law which does not give the Commission authority to summon witnesses and pay witness fees. Many apparently strong cases against operators are not presented to the Commission because, for various and obvious reasons, witnesses to the facts cannot be prevailed upon to testify as willing witnesses. If hearings of this kind are to be given, to be effective, the Commission should be empowered to summon witnesses and pay witness fees, and the Commission recommends that such action be taken by the Legislature.

"In connection with this part of the commissioners' work, it would seem proper that they might, in certain cases, take the initiative and cause aggravated cases to be brought before them for a hearing. This would, of course, imply a preliminary investigation by the Commission or by investigators working under its direction. In accordance with an opinion of the Attorney General, the present law does not give to the Commission authority to investigate cases of apparent reckless operating, but it appears that this could easily be done through the State police department, and the Commission recommends the passage of an act to provide that the State police shall look up cases of reckless operating when requested to do so by the Commission, and present the cases so investigated to the Commission at a formal hearing, notice of which shall be served on the person complained of.

"The Commission has sent a great number of cautionary notices to operators who commit minor offenses. It is believed that these notices produce a noticeably good effect. During the year the Commission has found it necessary to examine applicants for licenses to operate motor vehicles for hire, in order to be satisfied that the applicant is a proper person to receive such a license. There were 1,415 persons examined; 1,222 passed the examination successfully and 193 failed. Of those who passed 50 required a second examination and eight a third.

"The Commission issued a registration certificate to a member of the diplomatic corps at Washington without fees, in accordance with the international laws. The fees, however, were paid by another person. The Commission recommends an amendment to the law, to provide that members of the foreign diplomatic corps may receive registration certificates and operators' licenses without the payment of fees therefor.

Guild Suggests Another Shakedown.

Massachusetts, speaking through Governor Curtis Guild, Jr., manifests lack of satisfaction with the result of the shakedown to which automobilists in that Commonwealth were subjected last year, and apparently another one is in order. In his inaugural address on January 2d the governor complained to the legislators that they had adopted his recommendation of the year previous only in part. He expressed his desire for further legislation along the same line, giving to his recommendation a flavor of righteousness by pointing out the injustice of taxing big touring cars and the little runabouts all alike. He said:

"Last year the General Court adopted in part my recommendation that the automobiles, which more than any other vehicle destroy the surface of the State highways, should be made to pay through a tax in the form of an annual registration fee, for the repair of the roads they destroy. The present tax is inequitable. It should be so graded that the heavy touring car, which does serious damage, should not escape as at present with exactly the same light tax laid on the small and comparatively harmless runabout."

Chicopee Orders Fire Fighting Machine.

Chicopee, Mass., is to have an automobile fire fighting engine which will be a combination chemical hose and ladder truck. The contract was awarded to the Knox Automobile Co. on Friday, 3d inst. The truck, the first one of its kind, will be installed in the Willimansett section of the city. It will be a 1908 model four cylinder, 40 horsepower, three-speed, air cooled gasolene machine. It is to have a speed of 20 miles an hour in order to get the necessary hill-climbing power and will be built to ascend grades at from five to fifteen miles an hour, according to the percentage of incline.

Its fire-fighting devices will consist of two 25-gallon Halloway chemical engines with 300 feet of hose with two sizes of nozzles; two three-gallon hand extinguishers; 1,000 feet of standard hose, with two sizes of nozzles; one 24-foot extension ladder; 13--foot roof ladder; two of the latest design lanterns; ceiling pike, plaster hook, crowbar, door opener and two firemen's axes. The whole outfit will weigh 7,500 pounds. The wagon will carry two men and three men will be instructed in the Knox factory. The contract price for the machine is $5,000.

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LAW COMPELS VIOLATION OF LAW

So Says a Would-be Law Abiding Jersey Motorist of the Frelinghuysen Act—His Tale of Transgression.

Answering his own question as to whether the law has a right to make a man a criminal in spite of his own effort to avoid it a member of the New Jersey Automobile and Motor Club gives the following narrative of some of his experiences under the Frelinghuysen law:

"Two years ago, when I first got my car, I had read for months and months previous all the automobile matter I could lay my hands on, as I suppose does every beginner, and I had formed my own opinions. Then I read that in such and such a town one of the prominent motorists, on finding that the law was to be strictly enforced by the local authorities, immediately obtaining a red flag, warned every automobilist who entered the village. Now, in my innocence, I considered this defiance of the law, for the majority of which I had always entertained a great respect, and I at once concluded that when I finally got my machine and learned to drive it, I would demonstrate to my motoring friends, who had declared it to be impossible, how really easy it was for every man to adhere not only to the spirit, but the letter, of the law. My experience may be interesting to some others.

"After I had fairly learned to drive I had my car equipped with a speedometer as a prime requisite in knowing definitely myself that I was well within the speed limit. Then I sallied forth to show the world how law-abiding I could be.

"For this demonstration I selected one of the busiest streets in Newark, although one not actually blocked by the traffic. Keeping a watchful eye on the speedometer, I drove quietly along this thoroughfare, always keeping about a mile or so under the speed limit. The result was astonishing, to me at least.

"First I took to the car tracks, not from any premeditated reason, but by chance. The first thing I knew a trolley car came ambling up behind me and the motorman rang his gong. I glanced at my speedometer, saw I was just about at the limit of the law, and held to the tracks. Frantically the motorman stamped on that bell, then tried the tactics of bringing his car up with a swoop as near as he dared, and attempting to scare me off in that fashion. Having established to my own satisfaction that a blockade of trolleys would soon result if I held to the tracks much longer, I swerved to the right and held my pace.

"Now, this particular street is narrow and there is scarcely more than enough room for one good-sized wagon on each side of the trolley tracks, and the trolley cars themselves run very frequently. What had that to do with the question? you ask. Simply that drivers of carriages, other automobiles, and even light delivery wagons and large trucks, swore at me for blocking the street by my slow going, when, mind you, I was going at the limit the law allowed.

"Several other times I tried this experiment in other parts of the city before I gave up my first ideas as to the justice of the law and acknowledged that if I were to drive an automobile it must make of me a criminal against my own wish.

"To many this may seem a quibble, but to me it seems that there is something immoral in such a state of affairs. When a man learns that he cannot abide by the provisions of any particular law he immediately loses his respect for that act, and for the justice of all laws, and ten to one he will conclude that if he cannot obey some one provision, that the law is all wrong and he has no moral duty to follow in obeying other provisions which are in every way just and really needed for the good of automobilists in general."

Santa Claus with the Bay States.

By the visit of "Santa Claus" to the Bay State Automobile Association on New Year's eve, 31st ult., Boston becomes a rival of Philadelphia in things dilatory. Custom and tradition has long decreed that the visit of this mythical philanthropic saint shall take place on Christmas eve, but he did not reach the Boston automobilists this year until one week later than schedule.

D. B. "Pinkey" Price served as Santa Claus, though what "Pinkey" should want in Philadelphia is beyond explanation. "Bob" Ross and C. E. Wheeler helped hold the heavy bag of presents for all the good little motorists.

J. W. Bowman got a six-cylinder toy bank and E. A. Gilmore was handed a drum with instructions to "beat it." Gilmore took the advice literally and not as implied for instead of running home he remained at the club house and beat a lively funeral march each time a member was called up for his present. Fred O'Brien was a bit confused when he received a number of children's toys, while George Crittenden did not know how to take his gift of a pair of young goggles, a cooling fan, and other commodities. Lucius Tyler, who has figured in non-stop runs, got a tame sheep and a bank for his savings. V. A. Charles has games and toys enough to keep him amused until show time, and Harry Howlett will no longer have to go to Nantucket to shoot rabbits, as "Santa Pinkey" gave him a pair.

As George W. McNear has been a good secretary he was liberally remembered with a number of small though appropriate articles. "Al" Measure received a pair of nice old-fashioned woolen socks to keep him warm while hunting up tire business.

Everybody present got something amusing, and good humor and fun prevailed.

NANTUCKET'S LONE AUTOMOBILE

Though Confined to Railroad Tracks It is Preparing the Islanders for Progress—Two Bigger Ones Promised.

Nantucket is becoming progressive in spite of herself. The right little, tight little island has not given up its determination to keep the automobile off the public roads, but it has permitted the Nantucket Central Railroad to operate an automobile locomotive on the rails. This was an experiment on the part of the railroad company, and it has proved so successful that several others are to be added to the equipment.

This railroad is not a big nor a rich one, but Nantucket, although it constitutes one of the counties of Massachusetts, is not a big island. The old whaling port of Nantucket is its one town, and at the other end of the island there is a village named Siasconset, but invariably called 'Sconset. The railroad, 8.50 miles in length, connects the two places, but until the automobile locomotive was introduced early this winter the connection has been only for the summer season. It is doubtful whether the second-hand, narrow gauge steam locomotive—a veteran handed over by the Boston, Revere Beach and Lynn Railroad—which made eight trips daily between Nantucket and 'Sconset during the summer would be equal to more than one daily during the winter.

Not only are the islanders having a winter service, but they are making the Nantucket-Siasconset trip in better time than was possible with the old locomotive. Seventeen miles an hour was the rate of travel until the automobile got on the rails. The experimental car is a small one, with capacity for nine persons, but it is capable of better than seventeen miles an hour. It is the precursor of two larger ones to be built for next summer's travel, each of them to be of 60 horsepower and capable of carrying 35 passengers.

Jail and Prisoner Disappeared.

There is no jail at Elwood, N. J., a place midway between Atlantic City and Philadelphia. There was a temporary one there on Monday last, but it disappeared during the night with a prisoner. He was a chauffeur who had been placed in durance for refusing to submit to a ruling made by Justice of the Peace Carver, who is the terror of speed loving automobilists in that section. The constable had placed him in a freight car, which stood on a siding and made him comfortable for the night with a cot, and then went home to his own bed. A freight train picked up the car during the night and took it to Camden where the prisoner narrowly escaped arrest for stealing a ride. He got clear by the aid of a dollar, and wired Justice Carver saying, "Trip pleasant; arrived safely."

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The Week's Patents.

867,474. Device for Inflating Tires, etc. Robert H. Campbell, Edmonton, England, assignor to Aerators Limited, Angel Road, Edmonton, England. Filed Sept. 20, 1906. Serial No. 336,730.

1. A device for inflating pneumatic tires and for other purposes; the said device consisting of a cylinder provided with a valve and an attachment provided at one end with means for opening the valve and at the other end with means for attachment to the nozzle of the inlet valve of the tire, or the equivalent, to which gas is to be supplied, the said attachment also being provided with a branch therefrom carrying a pressure gauge.

867,503. Automobile Sleigh. Frederick Hartje, St. Thomas, N. D. Filed May 24, 1907. Serial No. 375,379.

1. In an automobile sleigh, a series of drive wheels adapted to engage the surface traversed, arms supporting the shaft of said drive wheels, a transverse bar to which the inner ends of said arms are connected, means for rocking said arms to raise or lower said shaft and drive wheels, a sleeve encircling said transverse bar, a motor, and connections between said motor and sleeve and said sleeve and drive wheel shaft for rotating the latter.

867,515. Tire Protecting Device. Leonard H. Kinnard, Harrisburg, Pa., assignor of one-half to Rollin S. Chamberlin, Harrisburg, Pa. Filed Dec. 8, 1904. Serial No. 235,932.

1. A tire protecting device composed of a shoe in which the tire fits, a stay consisting of a stiff endless ring fastened only to the shoe at one edge thereof, another similar stay, and a fastening connecting the shoe at its other edge with the latter stay, said fastening being adjustable to draw the edge of the shoe towards the stay.

867,588. Rim and Tire Construction for Vehicle Wheels. Montford P. Morrison, Atlanta, Ga. Filed Nov. 5, 1906. Serial No. 341,987.

1. A rim and tire construction for vehicles, comprising a rim member provided in its outer face with a deep annular channel the walls of which are parallel, said rim member being provided at the opposite sides with two projecting parallel annular flanges between which are deep annular grooves the walls of which are parallel, an elastic device placed in said channel, and an annular tire member provided with a central inwardly directed annular portion which fits in and is movable in said channel and which bears on said elastic device and the side walls of which are parallel, said tire member being provided at the opposite sides of said inwardly directed annular portion with deep annular grooves the side walls of which are parellel, said grooves being adapted to receive the inner flanges of the rim member, and said tire member being also provided at its opposite sides with inwardly directed parallel annular flanges adapted to enter the grooves formed by the flanges at the opposite sides of the rim member and the walls of which are parallel, said tire member being free to move in and on said rim member.

867,600. Vehicle Tire. Albert D. Ray, Cleveland, Ohio. Filed Nov. 7, 1906. Serial No. 342,362.

1. A tire comprising a flanged rim having a hole therein, a casing on the rim having a split base with shoulders at the sides engagable with the flanges, a flexible band extending lengthwise around within the casing upon the base thereof and having flexible ends extending through the hole, means to fasten said ends, and a resilient filler within the casing.

867,604. Carburetter. William F. Rothe, East St. Louis, Ill. Filed Sept. 18, 1905. Serial No. 278,858.

1. In a carburetter, a cylindrical member provided with an interiorly arranged spiral passageway, means whereby oil is discharged into the cylindrical member in front of the spiral passageway, means whereby the discharge of oil into the cylindrical member is regulated, and an adjustable member arranged beneath the oil inlet to receive the excess discharge of oil; substantially as specified.

867,605. Fuel Valve Controller for Hydro-Carbon Engines. William F. Rothe, East St. Louis, Ill. Filed Jan. 12, 1906. Serial No. 295 785.

1. In a device of the class described, the combination with a carburetter, of a valve for controlling the supply of hydrocarbon to the carburetter, the stem of which is screw threaded; a beveled pinion fixed on the upper end of the valve stem, a horizontally arranged shaft, beveled pinions on each end thereof one of which meshes with the pinion on the valve stem, a vertically arranged shaft, a beveled pinion on the lower end thereof which meshes with the pinion on the opposite end of the horizontal shaft, angle frames loosely mounted on the ends of the shafts around the meshing beveled pinions; and an operating handle fixed on the upper end of the vertical shaft; substantially as specified.

867,608. Photographer's Car. Jean Jean Schmidt, Frankfort-on-the-Main, Germany. Filed Aug. 16, 1906. Serial No. 330,934.

1. The combination with a photographer's car and a source of electricity carried thereon, of a drum on said car, and a conductor wound on said drum and connected with said source of electricity and also adapted to be connected to a lighting device, substantially as and for the purpose described.

867,614. Wheel. Benjamin C. Seaton, St. Louis, Mo. Filed June 7, 1906. Serial No. 320,669.

1. A wheel comprising a felly, an outer rim having a tread connected thereto, a plurality of independent arms formed separate from the felly to which they are connected and arranged alternately on the opposite sides thereof, independent arms formed separate from the outer rim to which they are connected and arranged alternately on the opposite sides thereof, transversely arranged tension springs connected to the arms on the felly and outer rim that are located opposite each other, and co-operating means on the outer rim and the arms connected thereto for preventing said arms from twisting; substantially as described.

867,616. Pump. Stephen G. Skinner, Chicago, Ill. Filed March 30, 1905. Serial No. 262,838.

In a pump of the described class, the combination of a base; inner and outer stationary cylinders rigidly connected therewith; a tubular piston rod extending downwardly between the upper ends of the cylinders; a piston on the lower end of said rod having a down-turned cup leather working on the inner surface of the outer cylinder; and a piston on the inner cylinder having an up-turned cup leather working on the inner surface of the tubular piston rod, said piston rod being provided with a valved passage leading to the interior of the rod from below the first mentioned piston, and said inner stationary cylinder being provided with a valved passage leading to the interior of the inner cylinder from above the other piston.

867,627. Induction Coil Apparatus. Ernest C. Wilcox, Meriden, Conn., assignor to The Connecticut Telephone and Electric Company, Incorporated, a Connecticut Corporation. Filed June 19,1907. Serial No. 379,731.

1. In an ignition system, the combination of an ignition device, a source of primary current, an induction device having its primary in circuit with the source of current and having its secondary in circuit with the ignition device, a vibrator in the primary circuit and having an adjustable member, a condenser shunted across the terminals of the vibrator and proportioned to the normal current consumption, and means for indicating the correct adjustment of the vibrator at the normal current consumption.

867,710. Wheel. William Eichers, Minneapolis, Minn. Filed Jan. 7, 1907. Serial No. 351,063.

1. A wheel comprising a rim and tire, a ring of channel bar iron concentric with said rim and having its flanges extending inwardly toward the said hub, a hub within said ring having outwardly extending annular flanges, the space between said flanges corresponding substantially to the width of said ring, bolts connecting said flanges, coiled springs having their inner ends connected to said bolts and their outer ends adjustably connected to said ring, and plates secured on the flanges of said ring and having sliding contact with the flanges on said hub, substantially as described.

867,713. Valve for Explosive Engines. Joseph S. Elverson, Catasauqua, Pa. Filed Feb. 6, 1907. Serial No. 355,977.

1. In an explosive engine, a cylinder, a head for closing the cylinder at one end and having a semi-circular opening, a valve having a semi-circular opening, reversed in respect to the opening of said head, said openings arranged when brought with their curved portions into alignment with each other to form combined, an opening of gradually increasing size.

867,717. Tire Covering. George R. Eukers and Robert H. Atcheson, Chicopee, Mass. Filed April 3, 1906. Serial No. 309,583.

1. A tire covering consisting of a body comprising a plurality of circularly coursed bands arranged to conform to the shape of an annular trough, and a multiplicity of metallic link-like tubes engaged with and connecting each of said bands with another thereof which is transversely there beyond, said tubes being provided in such number and having such proximate arrangement as to produce a flexible metallic tread and protective portion for the appliance.

867,748. Mechanical Movement. William B. Norton, Detroit, Mich. Filed Oct. 16, 1905. Serial No. 282,912.

1. In a mechanical movement for converting motion, in combination with a plurality of radially disposed cylinders, a plurality of pistons therefor, connecting rods pivoted to said pistons, a shaft central to said cylinders, a crank on said shaft, a wrist plate having a rotating connection with said crank and provided with sockets in which the ends of said connecting rods engage,

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the boundaries of said sockets being adapted to limit oscillation of the plate with respect to the several connecting rods, substantially as described.

867,756. Elastic Tire. Jacob W. Rock, Akron, Ohio. Filed Aug. 13, 1906. Serial No. 330,352.

1. An elastic vehicle tire provided with a plurality of holes, said holes extending from the tread portion thereof inwardly and arranged at an angle to the radii of the wheel on which said tire is mounted.

867,765. Automatic Steering Mechanism for Vehicles. William H. Strickler, Chicago, Ill. Filed Feb. 19, 1907. Serial No. 358,281.

1. The combination with a car having independently pivoted wheels, and means including a laterally movable part for connecting them, of automatic steering mechanism having a fixed guide, a runner engaging said guide and means for connecting the runner to said laterally movable part.

867,790. Attachment for Automobiles. Harry J. Carr, Sumter, S. C. Filed July 2, 1907. Serial No. 381,859.

1. The automatic attachment herein described, comprising the drum for application to a cranking shaft, and having a longitudinal bore or opening to receive the said shaft, a transverse opening intersecting the said longitudinal bore or opening, and ratcheted at its outer end for engagement by a crank handle, substantially as set forth.

867,795. Automatic Engine Starter. Clyde J. Coleman, New York, N. Y., assignor to Conrad Hubert, New York, N. Y. Filed Feb. 26, 1906. Serial No. 303,130.

1. An engine starter comprising a power-storing device, an engine actuating member normally connected to rotate with the engine, means for rotatably connecting the power storing device and the engine actuating member to start the engine, said means being constructed and operating to operatively engage the engine actuating member only when the power starting device tends to rotate faster than the engine and being movable out of engagement by the relative rotation of the engine actuating member during the normal operation of the engine, and frictional means for holding said connecting means out of engagement until the starter is again thrown into operation to start the engine.

867,796. Engine Starter. Clyde J. Coleman, New York, N. Y., assignor to Conrad Hubert, New York, N. Y. Filed Nov. 12, 1906. Serial No. 342,999.

1. In a starter for engines, the combination of a hydraulic motor, means engageable only in one direction of movement for connecting the motor to the engine to start the engine, a source of motive liquid under pressure connected to the motor, and means for returning the used motive liquid to its source.

867,797. Engine Starter. Clyde J. Coleman, New York, N. Y., assignor to Conrad Hubert, New York, N. Y. Filed March 13, 1907. Serial No. 362,102.

1. In an engine starter for multiple cylinder internal combustion engines, the combination of a carburetter, fluid carrying connections from the outlet of the carburetter to the inlets of the respective cylinders, manually actuatable means for concurrently opening an outlet from each cylinder, an atmospheric air inlet for the carburetter, means for closing the atmospheric air inlet, a source of compressed air communicating with the carburetter, and a manually actuatable valve in control of such communication.

867,851. Automobile Tire. George G. Sullivan, Buffalo, N. Y. Filed Nov. 13, 1906. Serial No. 343,183.

1. A link shield arranged between layers of rubber fabric and provided with rings connected therewith, partially surrounding rubber cores.

867,859. Carburetter. Edmond M. J. Weinat and Joseph Bogey, Chicago, Ill., assignors, by mesne assignment, of three-fourths to Andrew A. Brock, Chicago, Ill. Filed April 7, 1905. Serial No. 254,310.

1. In a carburetter, an oil reservoir containing a float and an inlet valve governed

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thereby, and having an outlet formed by an annular series of multiplex small passages, in combination with an annular air inlet valve for the carburetter surrounding said reservoir.

867,887. Means for Operating Fare and Distance Indicators. Otto Kuntzen, Berlin, Germany. Filed Oct. 19, 1905. Serial No. 283,543.

In combination with an indicator, a cam wheel adapted to be actuated from the wheel of a vehicle, a sliding rod provided with shoulders between which said cam wheel revolves and by means of which it imparts a positive to and from movement to the rod in both directions, and means whereby such motion is transmitted from the rod to the indicator.

867,988. Armor for Tires. Charles P. Mays, Washington, D. C. Filed July 13, 1906. Serial No. 326,065.

1. An armor for tires, consisting of a series of independent protecting sections, projections formed on the sides of said sections, segmental bands extending completely around the sides of the tire and each provided with a groove in its side for engaging the projections to hold the protecting sections in position, each of said segments being of a length to engage the projections on a plurality of the sections.

868,014. Automobile. Edmund W. Roberts, Clyde, Ohio. Filed March 17, 1905. Serial No. 250,503.

1. In an automobile, the combination with running gear comprising a driving wheel, of a combined internal combustion and compressed fluid multi-cylinder engine in permanent driving connection with such driving wheel, said engine comprising cylinders serving normally as cylinders of an internal combustion engine and provided with valves and valve gear for admitting fluid under pressure to said cylinders to operate the engine as a self-starting compressed fluid motor, the cylinders and associated parts and valve gear arranged to produce at least three impulses per revolution when operated as a compressed fluid engine, and means for supplying fluid under pressure to said engine comprising a reservoir, a compressor, an auxiliary internal combustion driving engine therefor, and automatic controlling means operated by rise and fall of pressure in said reservoir and controlling the operation of said compressor engine and comprising automatic starting means therefor.

868,047. Vehicle Wheel. George S. Whiteley, Baltimore, Md. Filed April 18, 1906. Serial No. 312,375.

1. In a vehicle wheel the combination of an inner wheel having spokes and an iron rim, an outer wheel having an iron rim and a rubber tire and between said wheels a series of S-shaped springs having on their inner end a spring plate, secured thereto and a pivot bolt between said spring and spring plate, and side plates receiving the ends of the pivot bolt.

868,079. Tire for Wheels. Herbert B. Ewbank, Jr., New York, N. Y., assignor to Harry A. Taylor, New York, N. Y. Filed July 25, 1906. Serial No. 327,615.

1. A wheel having on its periphery a central vertical annular flange having concave seats at its opposite sides, a series of outwardly bowed transverse plate springs arranged around the wheel with their adjoining ends coiled and disposed at opposite sides of said flange in sliding engagement with said seats, means retaining said springs and guiding them in their sliding movements against said seats, and an exterior rubber tire inclosing said springs and secured to the wheel; substantially as set forth.

868,081. Controller for Motor Vehicles. Clark E. Frear, Lake Winola, Pa. Filed Jan. 2, 1907. Serial No. 350,458.

1. A controller for motor vehicles, having a pivotally mounted wheel whose hub has an external circumferential groove upon its inner end, a controller plate movably mounted upon and engaging the axle of said vehicle and provided with an inwardly projecting flange engaging said groove, and means for shifting said plate.

868,105. Gage for Rolls in Roller Bearings. Charles S. Lockwood, Newark, N. J., assignor to Hyatt Roller Bearing Company, Harrison, N. J., a Corporation of New Jersey. Filed Oct. 25, 1906. Serial No. 340,434.

1. A sheet metal cage, for hollow bearing rolls, having annular heads at the ends, integral guide bars connecting such heads and integral flexible prongs projected from at least one of the heads between the guide-bars to penetrate the rolls and hold them in place.

868,202. Internal Combustion Engine. Norman Macbeth, St. Annes-on-the-Sea, England. Filed March 6, 1907. Serial No. 360,961.

1. An internal combustion engine having parallel explosion cylinders, admission ports in one cylinder, exhaust ports in the other cylinder, a common combustion space, a centrally disposed air and fuel charging pump located nearer the crank shaft, pistons in said explosion cylinders and working parts, said explosion cylinder cranks pistons and working parts being set at opposite angles to and balancing the charging pump crank piston and working parts for the purposes and as set forth.

868,207. Resilient Tired Wheel for Automobiles and Other Vehicles. Abram C. Monfort, Providence, R. I. Filed May 25, 1906. Serial No.

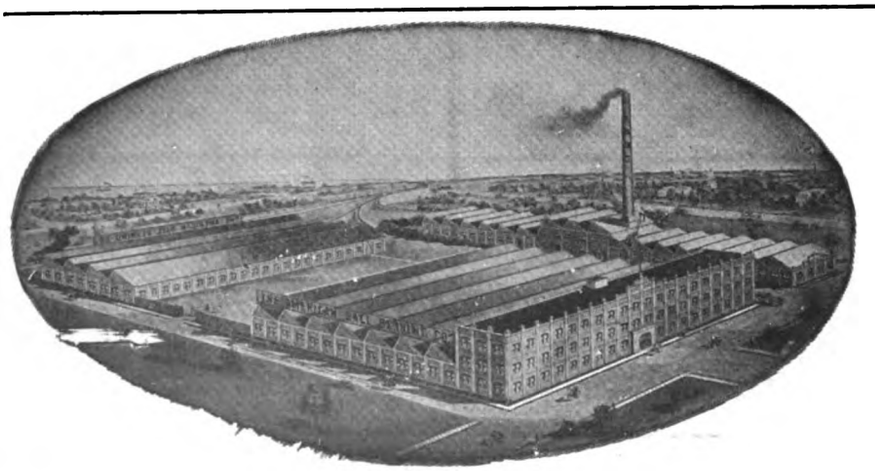
1. In a resilient tired wheel for automobiles and other self-propelled vehicles, the combination with a suitably mounted rim, a pair of oppositely disposed annular plates rigidly secured to and extending radially beyond the rim, and an annular pneumatic or inflatable tire located between said plates and seated in the outer periphery of said rim, of a plurality of radially arranged independently movable and laterally separated inelastic sections having their inner or lower sides bearing against and being supported by said tire, means for limiting the movements of said sections, the ends of the latter transversely of the wheel being constructed so as to form narrow spaces between them and the adjacent inner faces of said plates, an annular flexible and compressible traction tire member in direct contact with the outer periphery of said sections provided with integral side flanges extending downwardly into the said narrow spaces, and means for maintaining the traction tire in position upon said section.

868,208. Device for Preventing Slipping of Motor Driven Vehicles. Alban S. Moore, London, England. Filed Aug. 17, 1906. Serial No. 331,080.

1. Apparatus for preventing side slipping or skidding of motor driven road vehicles, wherein an additional rearward wheel, driven from a motor, is coupled to and operated by the steering mechanism, so that it will be caused to change to any required extent, the direction of its motion and gripping power on the road surface, simultaneously with, and approximately corresponding to the direction of travel of the steering wheel, or wheels, of the car.

868,304. Hydraulic Clutch and Transmission Device. Clarence H. Tingley, Unionville, Mo. Filed Nov. 30, 1906. Serial No. 345,745.

1. The combination in a clutch, of a stationary fluid reservoir, two relatively rotatable members having contiguous ends inclosed in said reservoir, pump pistons carried by one member in eccentric relation thereto, pulp cylinders carried by the other member and equi-distantly located with relation to its axis, fluid inlet ducts from the reservoir to the pump cylinders, outlet ducts from the pump cylinders to the reservoir, and means for constructing the outlet ducts to regulate the degree of clutching action.



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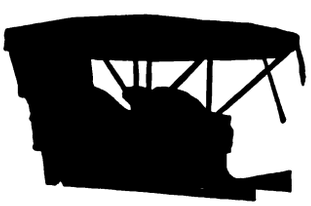
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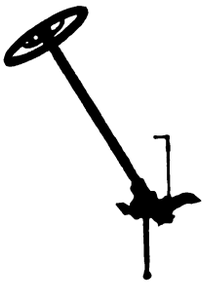
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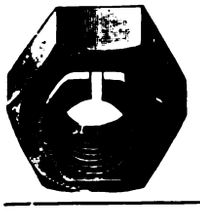
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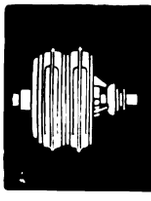
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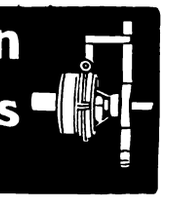


Nuts That Require Tightening After considerable use the bolts holding the sprocket rings to the driving wheels of chain driven cars tend to become loosened in the spokes. Hence, when overhauling an old car, it is well to tighten the nuts which hold them in place, riveting over the ends for the sake of security. In doing this care should be taken not to throw the sprockets out of line.—From "Motor World," August 8, '07.

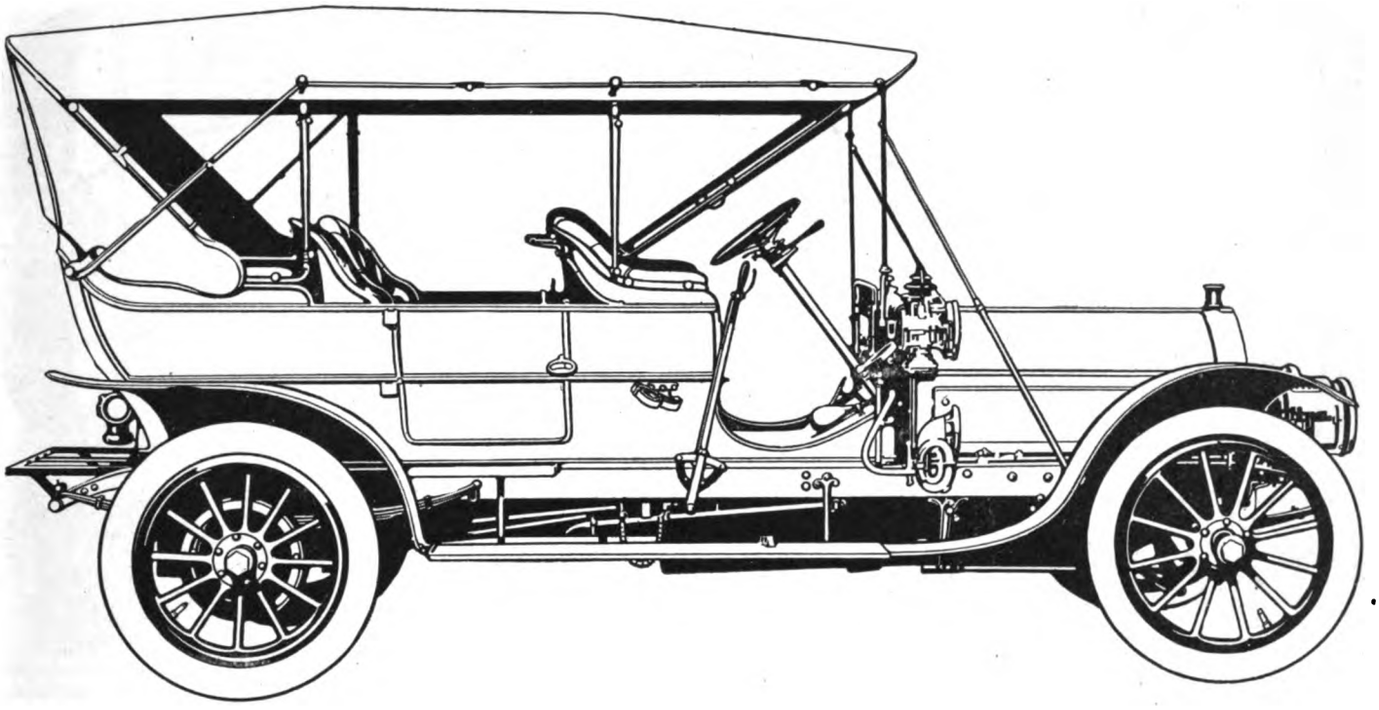
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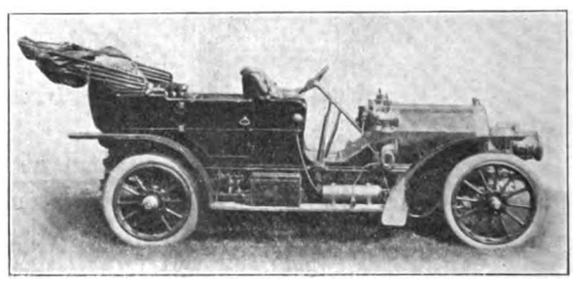
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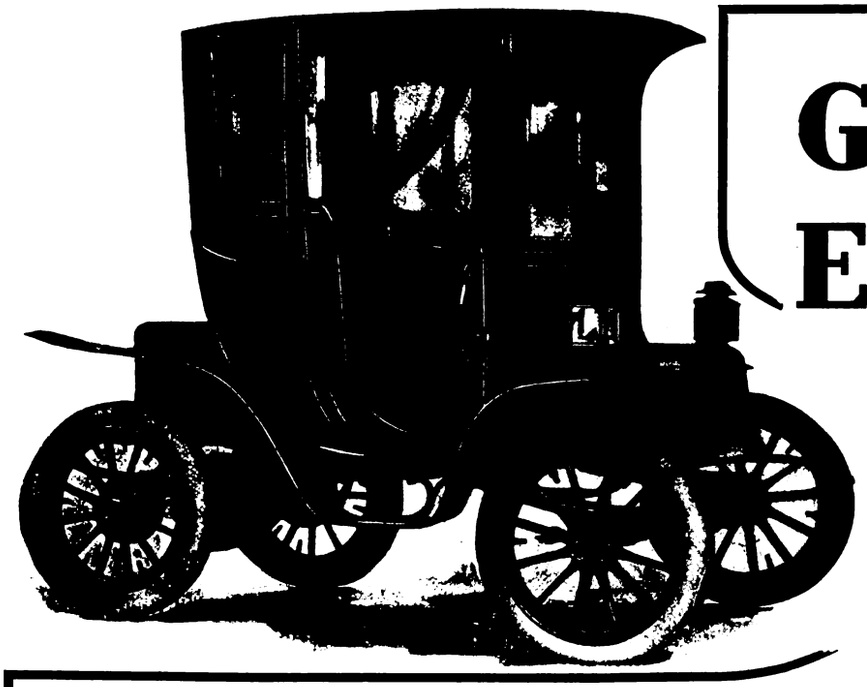
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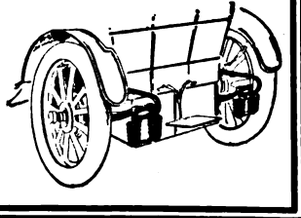
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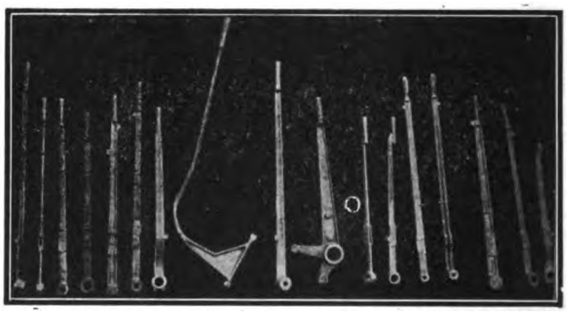
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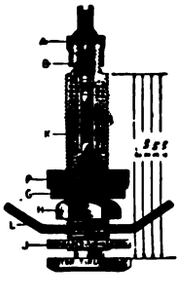
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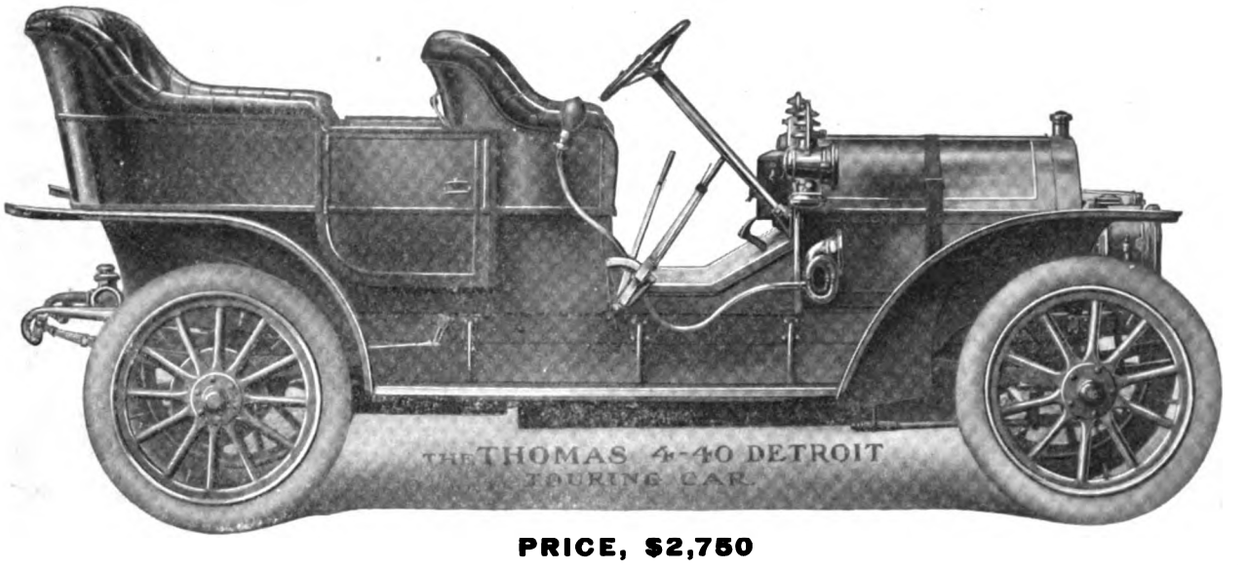
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No cars at any price have ever equalled the "Maxwell" records for efficiency and reliability.

No car of efficiency is so simple of operation or so inexpensively maintained.

The features which the "Maxwell" originated, and which motor-car manufacturers have since adopted, are alone sufficient to establish its superiority—The "Maxwell" Multiple-Disc Clutch, Three Point Suspension of Power Plant and Transmission, Single-Unit Construction of Engine Case and Transmission Housing, Pumpless Thermo-syphon Cooling System, Indestructible Metal Bodies.

The "Maxwell" Tourabout costs $825, the 20 H. P. Touring Car, $1,450, and the 24 H. P. Touring Car $1,750.

Considering "Maxwell" prices, the "Maxwell" records and the consensus of opinion of the 10,000 owners of "Maxwell" cars, can you think of one good reason why you should buy anything but a "Maxwell?"

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And then, inquire if he can point out anyone who has found the Ajax guarantee to be anything but a SQUARE DEAL.

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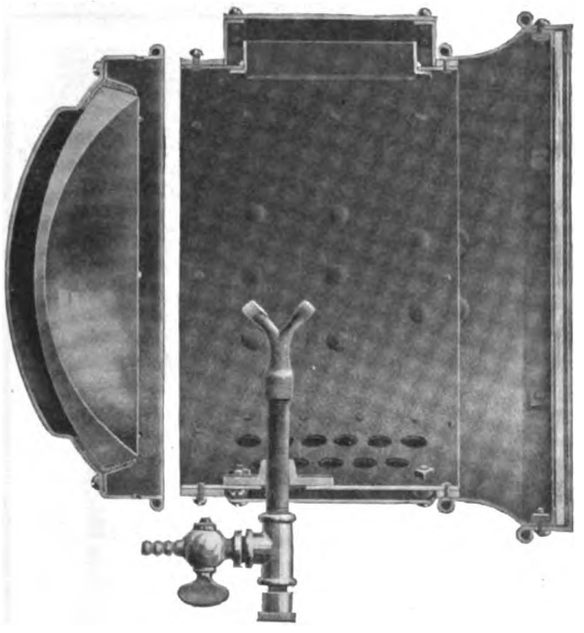
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Rushmore Flare Front Headlight
in section, showing removable back cap

Permanent Injunction Granted Against Copying The Rushmore Flare Front Design

A PERMANENT INJUNCTION was granted on Jan. 3, by the United States Circuit Court, Southern District of New York, against the Manhattan Lamp Works, forbidding them to make or sell lamps in imitation of the Rushmore Flare Front design, or to use the words "Flare Front" in describing their product. The terms of the Judge's decision are very broad, and we shall at once proceed against other lamp manufacturers who have for the past year been trading on our reputation by the sale of cheaply-constructed imitations of the Rushmore.

Two years ago, when the American trade generally was copying a French reflector lamp, we adopted the now familiar Rushmore Flare Front as a distinctive dress. It was immediately linked in the public mind with the intense, long range beam of the Rushmore Lights, and by the fall of 1906 there was not a motorist who thought of lamps at all but recognized the optical correctness of the Rushmore, and its immense superiority over every other type offered. Other makers, seeing their trade slipping away, discarded their own models and began making copies of the Rushmore. But, lacking the means and skill to duplicate Rushmore quality—in particular the short-focus lead-glass Rushmore Lens Mirror,—they copied the shape only, using in general thinner stock, solder instead of screws and rivets, and small, cheaply-ground, green glass lens mirrors of long focus. These flimsy affairs, in many cases nearly worthless as light givers, they sought to foist on the public by cut prices, chicanery, and downright substitution. Numberless purchasers who specified Rushmores, or who did not know that every lamp and lens mirror we make bears our name, were deceived by the imitations, and laid the blame for their inefficiency anywhere but where it belonged. Thousands of others were persuaded that the imitations were "as good as the Rushmore," only to realize their mistake too late.

Of these unscrupulous practices the Manhattan Lamp Works afforded a small but flagrant example. We propose to defend to the finish our right to keep our designs exclusive, and the public's right to suppose that what appears to be a Rushmore Light is such in fact. Meanwhile we caution all purchasers to look for the name RUSHMORE etched in the lens mirror, and our firm name engraved plainly in the top of the ventilator (Rushmore Lights have no name plates).

Rushmores vs. the "Chinese Copies"

Some Usual Points of Difference

Rushmores	"Chinese Copies"
1. Heavy sheet brass; all parts held together by screws and rivets, not by solder.	Sheet brass too thin to hold screw heads or rivets, therefore solder mainly relied on.
2. Lens Mirror large, of heavy heat-resisting lead glass, ground of deep curvature and short focal distance. Removable as shown.	Lens Mirror small, of light brittle green glass, relatively flat and of long focal distance. Not removable except with soldering iron and torch.
3. Front and back of cylinder stiffened by heavy endless rings, riveted on.	Light non-continuous rings soldered in place.
4. Castings machine finished and accurately fitted. All details carefully attended to.	Castings roughly fitted, side sockets soldered, and details generally slighted where not seen.

Rushmores
the final choice of the experienced motorist



There is Only One BEST

Rushmore Dynamo Works, Plainfield, N. J.

LONDON **PARIS** **CHICAGO**

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The Car of Steady Service

as applied to the

Rambler

is more than a mere phrase, it is a title earned through correct design and careful construction and proven by years of hard, constant service wherever power-driven vehicles are known.

The practical qualities that established the Rambler reputation are,—

1st—APPLIED POWER. By this we mean actual tractive force as applied to the road wheels. Owing to the straight line drive of the four-cylinder models and the direct chain drive in the two-cylinder cars, Ramblers have greater propelling force per pound than any other car on the market.

2d—DEPENDABILITY. Ramblers are built to stand the test of hard, daily service over the worst of American roads. This condition is not reached by mere weight and masses of metal, but by simple, scientific construction in which each element is stronger than the strains upon it can ever require.

3d—PRACTICAL ROAD VALUE. With the vast facilities of an enormous plant like the Rambler factory, skillfully directed to the production of two models only, greater value per dollar can be offered than is possible in a plant of lesser output.

In short, the Rambler is a car of

Power, Service and Value

Ordinary business policy dictates a careful examination of its many high qualities before ordering your new car.

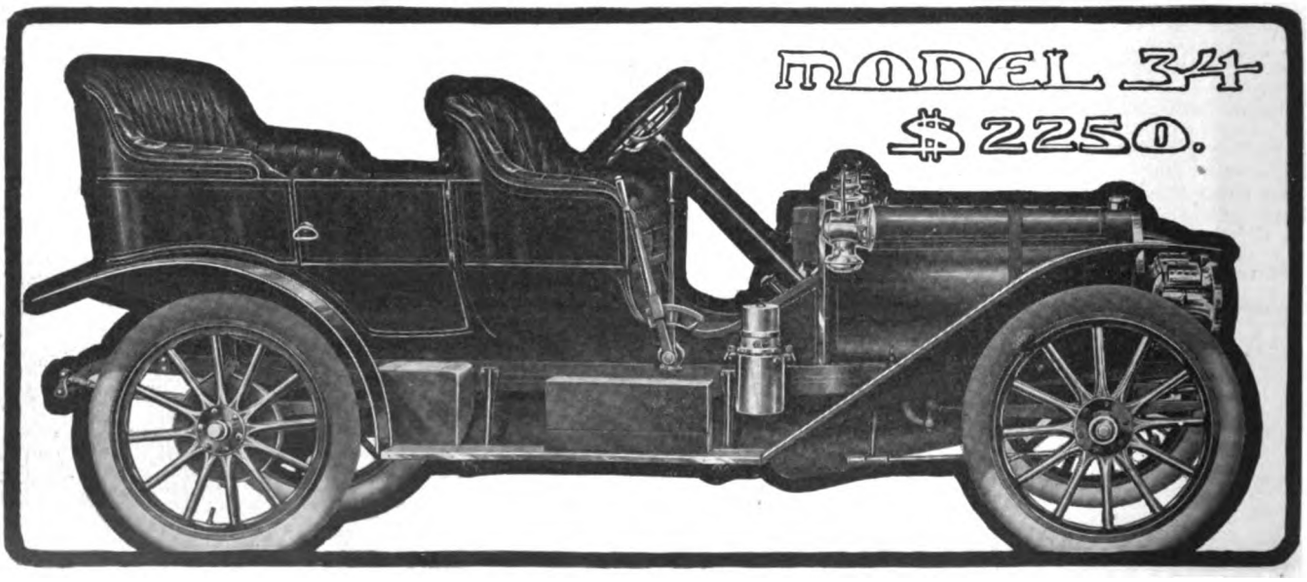
Our 1908 catalog fully describing two touring cars and a high-powered roadster is at your service: write to-day.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies

CHICAGO BOSTON MILWAUKEE PHILADELPHIA SAN FRANCISCO



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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, January 16, 1908. No. 16

MILLER PREDICTS A BUSY YEAR

His Favorable Analysis of Reports from All Sections—Business Methods Likely to be More Conservative.

It is not often that W. B. Miller, the secretary and sales manager of the Diamond Rubber Co., permits himself to be quoted in print. When he does so, it is certain that he has something worth the saying, and when it has to do with business conditions and prospects, his statements cannot but carry weight, for few, if any, are in closer or more thorough touch with the several phases of the business.

"A busy year for accessory branches of the automobile industry," is his prediction, summed up in the fewest words. "The basis of this statement is a careful analysis of reports from all sections," he says. "These reports indicate that the amount of renewal business to be done will be larger than ever before. The number of automobiles in use the past year will not be reduced. If some owners do not see fit to use their machines, the cars will pass to those who will. The number of new cars to be provided for, while not equal to that of 1907, will still reach, in the aggregate, a very large figure, making necessary in the grand total a great extent of equipment of all kinds.

"It is to be expected that business will be done along more conservative lines in all branches of the trade. The accepted forms of regular merchandising will prevail to a greater extent than formerly and high quality, particularly in tires, will be demanded because of the true economy of using such products. The far-seeing dealer and consumer are both on the quality platform, and both alike working for the greatest economy in up-keep cost. That they should do so is highly desirable. The 1908 season will undoubtedly see greater discrimination in buying exercised by all automobile owners, and the general effect cannot but be healthful and beneficial to the industry as a whole."

To Make Taximeters in This Country.

In anticipation of the growth of the taxicab a new company to manufacture the taximeter instruments in the United States has been formed under the name of the International Taxameter Co. of America. It will operate under the American patents owned by the Internationale Taximeter Co., Ltd., of Berlin, which at the present time makes a large proportion of taximeters used abroad. The company is incorporated under New York laws with $300,000 capital, of which $50,000 is preferred stock. Jacob A. Cantor, former borough president of Manhattan and an ex-State senator, is one of the leading spirits in the enterprise and J. A. Costuma is the general manager. Pending formal organization, temporary offices are maintained at 25 Broad street, New York. It is planned to lease the taximeters on a 10 cents per day basis, rather than to sell them outright, and the promoters look forward to placing 10,000 instruments in New York and its vicinity, with all the rest of the country still to be heard from.

Duryea Wins in Receivership Fight.

The action of the referee in bankruptcy in refusing to permit H. M. Sternbergh to vote his claim for $14,438.86 for the selection of a receiver for the Duryea Power Co., of Reading, Pa., of which he was president, was sustained by the United States Circuit Court on Friday last. The case was argued in October last. The effect of the decision is that there can be no further legal interference with the Berks County Trust Co., whose selection was opposed by Sternbergh and favored by Charles E. Duryea, the latter winning by a majority of one vote. It is expected that the receiver now will apply for an order to sell the property and that proceedings will be taken to compel Sternbergh to pay $26,000 which is claimed to be due for an unpaid stock subscription and which has remained in dispute.

APPRAISAL OF THE E. V. ESTATE

Report to the Court Shows a Total Valuation of $1,709,603.08—Selden and Other Patents not Included.

Excluding the Selden patent, on which, while acknowledging its earning capacity, they diplomatically declined to place a value, the appraisers of the property of the Electric Vehicle Co., Hartford, Conn., have reported to the court that the estate is worth $1,709,603.08. The appraisers, John R. Hills and F. C. Billings, pared more than $300,000 from the inventoried value of the merchandise and nearly $60,000 from the value of the book accounts. Their report shows that the New Haven Carriage Co., body builders, is one of the most profitable of the Electric Vehicle Co.'s possessions. It was purchased in 1899 for $193,578.47, and since that time has paid in dividends $211,500.

Of the Selden and other patents included in the assets, the appraisers say:

"This patent on a road engine is considered very valuable by the officers of this company, which holds the exclusive license with the right to grant sub-licenses for the use of this patent. We are informed by the receivers that the rights of the Electric Vehicle Co. in this patent have been productive of a large net income during the past five years, which income has been in excess of $500,000. This patent has still five years to run, and if the income from this source during the next five years shall equal or approximate that of the last five years, it is apparent that this patent is a valuable asset of the company. We are unable to determine the present value of the income which may in the future be derived from this source, and for this reason we have not attempted to put a definite appraisal thereon. In addition to the above, there are more than 125 other issued patents, relating directly, or indirectly, to automobiles, granted between May, 1891, and

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September, 1907, and numerous applications for letters patent are pending in the United States patent office, the value of which we have no means of ascertaining and we respectfully refer to list of same. We appraise these as of value unknown. We also wish to call attention to the fact that in arriving at the grand total, we have not taken into consideration the value of the good will of the Electric Vehicle Co. as a going concern."

Following is the inventory in full:

Land in town of Hartford	$48,000.00
Spur track running to property of company	7,500.00
All buildings on property in Hartford	249,653.00
Power, electric and heating plants and accessories, consisting of boilers, pumps, heaters, filters, motors, transmission, wiring and fixtures, fire protection, including watchman's system	79,897.00
Special equipment, consisting of fuel oil system, compressed air system, plumbing for manufacturing purposes and shop fixtures (such as benches, drawers, cupboards, tanks, etc.)	9,900.00
Machinery for manufacturing purposes. (Note: Value of machinery slightly increased on company's inventory valuation for reason that said inventory shows excessive depreciation, and we estimate original cost at not less than $195,000)	165,000.00
Standard small tools such as are generally used in the manufacture of automobiles and machinery of all classes	40,000.00
Jigs and fixtures for making parts of automobiles, also dies and tools for manufacturing drop forgings for parts of automobiles	33,300.00
Patterns for making castings for parts of electric and gasolene automobiles, including metal and wood patterns (company's book value, $24,015.00)	16,000.00
Office and factory furniture, including time and cost keeping system	4,400.00

Merchandise account, itemized as below in two columns:

	Inventory Values	Corrected Values.
Finished parts stores.	$383,952.04	$255,969.00
General stores	162,094.93	129,000.00
Work in progress (parts)	154,189.35	102,700.00
Vehicles in progress.	164,930.29	123,000.00
Consigned inventory (merchandise)	3,467.13	467.00
Finished vehicles	125,635.16	110,000.00
Consigned vehicle account	17,927.11	16,200.00
Second-hand vehicles	49,884.29	12,500.00
Stationary and literature	13,279.45	5,000.00
Commerce St. stores.	18,205.95	2,000.00
	$1,093,565.70	$756,836.00

Book accounts inventoried as of December 10, 1907.

	Book Values	Corrected Values.
Suspense account amounting to	$17.006.71	
These accounts being in the hands of attorneys and collectors and many of same being very old and of doubtful value		1,500.00
Sundry debtors' account amounting to	22,383.35	
Largely consisting of unpaid royalties, which are considered uncollectable		9,000.00
Accounts receivable amounting to	104,549.51	
These accounts have been carefully investigated and $15,000 of same are considered uncollectable. We also allow 15% to cover time and cost of collection		76,117.08
Total inventory value	$143,939.57	
Total corrected value.		$86,617.08

Note: Item "book accounts" include all book accounts whether in hands of Connecticut receivers for collection or in hands of receivers in the States of New Jersey, New York, Massachusetts or Illinois, for collection by them respectively.

Consisting of the entire capital stock of the New Haven Carriage Company, located at New Haven, capitalized as follows:

2,000 shares pref. stock at $25	$50,000.00
6,000 shares common stock at $25.	150.000.00
Total	$200,000.00

The Electric Vehicle Co. purchased the entire stock of the New Haven Carriage Co. June 1, 1899, for $193,578.47. Since the said purchase the New Haven Carriage Co. has paid in dividends $211,500.00, and from statements shown is believed by us to be in good condition, having a surplus of $75,000 over all liabilities and stock. Therefore, we feel warranted in placing the preferred stock at the rate of 125 per cent. on par value, or $31.25 per share, and the common stock at the rate of 100 per cent. on par value, or $25 per share, or a

Total value of	$212,500.00
Grand total	$1,709,693.08
Total value of	12345665432

The receivers add a note to the inventory, saying there is not included in the above inventory an item of cash on hand in Hartford of $13,983.81, and assets in other jurisdictions amounting to $112,184.51.

The receivers also filed with the court the following report of business transacted by them from December 11 to December 31, 1907, inclusive:

Sales.

Charges on account	$5,209.25
Cash	10,550.94
	$15,760.19

Purchase.

On account	$1,245.96
Cash	450.52
	$1,666.48

Cash Statement.

Receipts.

Cash on hand Dec. 11	$13,983.81
Cash collected on account	10,146.14
Cash sales	10,498.99
Cash miscellaneous	51.95
Illinois accounts	2,738.40
Massachusetts accounts	40.21
	$37,459.50

Disbursements.

Pay rolls prior to Dec. 10	$12,501.16
Pay rolls receivers	11,353.93
Traveling expenses	357.39
Petty expenditures	420.52
Illinois receivers	2,207.50
	$28,840.50
Cash receipts	$37,459.50
Cash disbursed	26,840.50
Cash on hand	$10,619.00

Taxicab Service Begun in Chicago.

Chicago, part of it at any rate, taxicabbed Thursday morning last, when the first of the Thomas taxicabs was placed in operation by C. A. Coey. Fifty of the vehicles will be in operation shortly. According to advices from the Windy City Owen H. Fay also will start a taxicab business. Fay has ordered ten Elmore cabs built and will place taximeters on eight electric cars, starting with eighteen available vehicles. With Orlando Webber also about to engage in the business as well as a subsidary company of the New York Taxicab Company, Chicago apparently will not want for the modern vehicles.

New York Dealers Promote a Carnival.

At a meeting of the New York Automobile Trade Association held at Hotel Cumberland, New York, yesterday, attended by over fifty prominent members of the trade in New York, it was definitely decided to hold an automobile carnival during the week of April 6. One of the settled features is a parade on Tuesday, April 7, which will consist of four divisions. The first division will comprise cars constructed in 1903 and prior thereto; second division, gasolene, steam and electric cars owned by dealers, cars not to be decorated; third division, commercial vehicles.

Brass Bands to Boom Business.

About the time the buds begin to sprout the Chicago Automobile Trade Association is going hunting for business with brass bands. During the week beginning March 28th, the Windy City dealers will hold a "spring show" which will consist of the dealers holding "open house" along the "row," which will be gaily decorated for the occasion. Brass bands, decorated parades, luncheons, and all the other features of a carnival will be brought into play to boost spring business in Chicago.

Stratton Joins Studebaker Staff.

E. V. Stratton, for the past year manager of the New York Automobile Trade Association, has resigned that staff to engage with the New York branch of the Studebaker Automobile Co., He will be associated with C. F. Redden in the management.

Body Builders' Increase of Capital.

The C. R. Wilson Body Co., Detroit, has increased its capital stock from $75,000 to $250,000. The added money will be used in extending the business.

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LEGAL VICTORY FOR RUSHMORE

His Right to Name and Descriptive Words Sustained by an Injunction—Saxon "Caught with the Goods."

The merry war in the automobile lamp business which was precipitated last spring over the questions of design in connection with the "flare front" and "Rushmore" types has found an echo in court, and the defendant lamp manufacturers who made and sold "Rushmore" lamps which were such in appearance only, seem to have been so thoroughly "caught with the goods" that they have been enjoined against their further manufacture and must give an accounting. In a decision in the United States Circuit Court for the Southern District of New York, Judge Ray takes Herman Saxon, of the Manhattan Lamp Works, of New York, severely to task for copying in detail the genuine Rushmore lamps and gives the complainant, Samuel W. Rushmore, of the Rushmore Dynamo Works, Plainfield, N. J., a sweeping injunction covering the use of the words "flare front" and "Rushmore."

Conspicuous among the exhibits during the trial of the case were receipts from the Manhattan Lamp Works covering the sale of "Rushmore" and "imitation Rushmore" lamps, together with lamps themselves made in imitation of the complaining manufacturer's product. Saxon appears to have readily fallen into the trap that was laid for him. In one case the receipt covered the sale of lamps to a purchaser during the Madison Square Garden automobile show, in January, 1907, while in another it represented an invoice of lamps to a western jobber.

Considerable stress was laid by the court on the fact that the design copying of the defendants was in some particulars so close and minute as to include defects and errors found in the original lamps, though in the main essentials of lens mirrors and brass stock the imitation lamps were quite different.

The judicial view as to the use of the words "flare front" in describing automobile lamps is of particular interest to the trade. After showing that while "flared front" and "flaring front" are ordinary and grammatical descriptions, the words "flare front" in combination, are unusual and ungrammatical, having been adopted by the complainant arbitrarily to coin a new and distinguishing mark for his lamps, Judge Ray says, "It is, of course, true that everyone is at liberty to use the ordinary descriptive words of the English language to describe goods of his own manufacture. But when one has designedly and abitrarily taken an unusual and an ungrammatical combination of two words, even if they do suggest an idea and a correct one of the construction and utility of the article of manufacture, and by long use of it has come to be so understood by the purchasers and users thereof, a competitor has no right to use it, for the purpose of deceit."

For this reason he grants a decree for the complainant, covering both the making and selling of the offending lamp shells and the use of the words "flare front."

The Week's Incorporations.

Newark, N. J.—Brush McLaren Motor Co., under New Jersey laws, with $50,000 capital; to manufacture and deal in automobiles. Corporators—Annie V. McLaren and John Stern.

Watertown, N. Y.—Warner Automobile Co., under New York laws, with $10,000 capital. Corporators—Charles D. Warner, Albert O. Warner and Edith Warner, all of Watertown.

Reading, Pa.—Reading Practical Automobile School, under partnership agreement, with $200 capital; to teach automobile operation and repairing. Copartners—Malcolm T. Newstetter and Lester E. Goenzle.

Newark, N. J.—New Jersey Automobile Exhibition Co., under New Jersey laws, with $5,000 capital; to promote automobile shows. Corporators—George Paddock, Angus Sinclair and James R. English.

East Moline, Ill.—Midland Motor Co., under Illinois laws, with $100,000 capital; to manufacture motors, automobiles, etc. Corporators—C. H. Pope, A. E. Montgomery, E. H. Guyer, C. E. White and William Butterworth.

St. Louis, Mo.—Universal Auto Spring Co., under Missouri laws, with $110,000 capital; to manufacture and deal in automobile springs and supplies. Corporators—Frank C. Koehler, Wm. Klasing, Henry Schwarting et al.

New York City, N. Y.—Automobile League, under New York laws, with $5,000 capital. Corporators—Frank J. Griffen, 116 Nassau street; Nicholas Fancher, 213 East 135th street; William T. Conville, 2493 Broadway, New York City.

Rochester, N. Y.—Rochester Motor Vehicle Co., The, under New York laws, with $10,000 capital; to sell motors, engines and accessories. Corporators—Fred C. Benson and Owen DeWitt, of Rochester; and Stephen H. Lusk, of Pittsford.

New York City, N. Y.—Columbia Lubricating Co., under New York laws, with $1,000 capital. Corporators—Avery McDougal, 176 West Eighty-seventh street; Ward W. Pickard, 60 Wall street; Morton G. Bogue, 52 Williams street, New York City.

New York City, N. Y.—Adams Repair Co., under New York laws, with $10,000 capital; to repair automobile parts, etc. Corporators—Clyde W. Adams, 457 West Fifty-seventh street; Claude L. Post, 605 West 141st street; Robert P. Kernan, 60 Wall street, New York City.

WRIDGEWAY WILL LESSEN GLARE

Secures Exclusive American Rights to Bleriot Light Shutter—Mayor's Message Opportune for Him.

Almost co-incident with the recommendation of the Mayor of New York that an ordinance be passed prohibiting the use of blinding headlights, Charles D. Wridgeway, himself a New York motorist of wide experience both on track and road, closed a contract for the exclusive American rights to the Bleriot light shutter or eclipsing device which seems to do away with the objectioable features which have caused complaint, while still permitting the use of brilliant headlights and giving to the driver all of their benefit and to the on-comer none of their disadvantages.

The Bleriot invention, which the Motor World illustrated at the time of its appearance abroad, is simplicity itself, resembling nothing so much as a miniature radiator of the horizontal stripe type. It is, in brief, a series of metal strips placed within the door of the lamp, so arranged that at a distance, there is no distinguishable difference between lamps so equipped and the regular type, but as one draws nearer the lamp the light becomes duled, and on passing reduces itself to about the same sized rays as those cast from an oil light turned down There is absolutely no reflection. The device, one of which Wridgeway has been demonstrating, must be seen in actual operation to be appreciated. In the meantime Mr. Wridgeway, thoroughly converted to its value, is preparing an aggressive campaign to place its merits before the motoring public at large.

Cincinnati Show Fading Away.

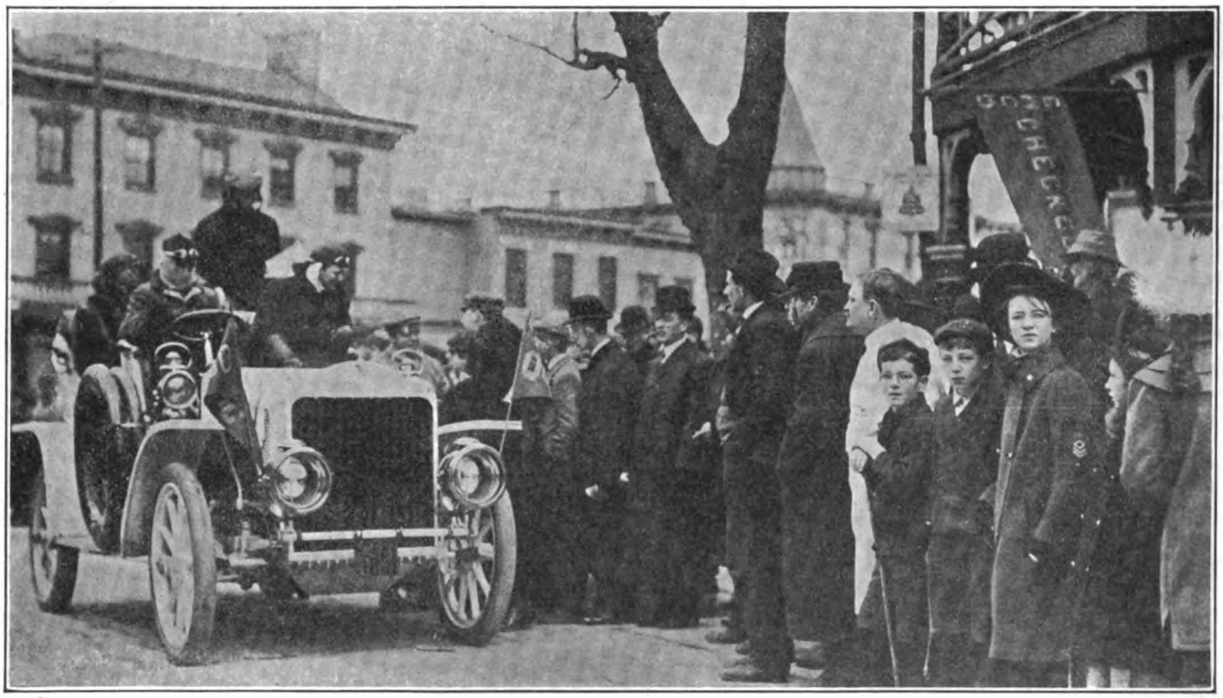
It is doubtful if the Cincinnati show, which was scheduled for the latter part of February, will be held. Following the last meeting of the Cincinnati Automobile Dealers' Association it was semi-officially announced that the show idea will be abandoned. The chief obstacle in the way is said to be the action of the insurance companies in demanding high rates, and while it is possible that this handicap may be removed, the general opinion is that it will not in time to make arrangements such as would be neeessary to make the show a success.

G & J Changes Boston Representative.

The Boston agency of the G & J Tire Co., at 204 Columbus avenue, has been discontinued and the Enterprise Rubber Co., of which William E. Barker is president and treasurer, has been appointed New England representative. D. B. Price and R. J. Barker, who have been connected with the G & J agency, will continue with the Enterprise Rubber Co.

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THE INCOMPARABLE
WHITE
THE CAR FOR SERVICE



White Wins Quaker City Endurance Run

In the endurance run held January 1-2 by the Quaker City Motor Club, the White Steamer was the only car which made a perfect score on the road and also was declared by the Technical Committee to be in perfect condition at the finish. The Contest Committee would not abide by the decision of the Technical Committee. They gave credit for perfect scores to two other cars and ordered a "run-off."

The supplementary contest, held January 4th, served only to emphasize the superiority of the White. The examination then made by the Technical Committee placed the White far in the lead and, accordingly, the MacDonald & Campbell trophy was awarded to the White.

With our entry of but one car, we decisively defeated 27 gasoline cars representing 23 different makes. Thus has another important victory been added to the long list of triumphs achieved by the White—the distinctively American car.

Write for Literature

THE WHITE COMPANY
CLEVELAND, OHIO

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, JANUARY 16, 1908

Lifting of the Clouds.

During the period of financial unrest, which now is nearly dissipated, nothing has been at once so pitiful and so amusing as the efforts of the braver souls to convince themselves and others that "nothing had happened,"—that everything was rosehued and that the so-called depression was but a bad dream.

It serves no purpose to wail, or shed tears, or to spread gloom, but neither does that form of self-deception and rainbow-chasing effect any real end. It is like whistling to keep up courage. When a manufacturer cannot obtain accommodations from his bank, when his factory is operating on half time or no time at all, when a salesman cannot sell and when a man is out of employment, it is folly to try to convince him that "everything is lovely' and that "nothing has happened," or that the conditions to which he is subject are merely dreams or imaginings which may be routed by applications of faith or by cheerful whistling.

But now it may be said that the clouds are dissipating and that the sun again is shining through the rifts. Things are picking up all around. Factories are resuming their industry and salesmen are again selling automobiles. Cheerfulness is spreading and it is the real thing and not the mock article accompanied by doubtful smiles or qualifying whispers. The industry is resuming a normal tone, if not its normal tone, for its normal tone rather had been abnormal. Its pace had been too swift. Caution had been too largely thrown to the wind. There were too many who recked not of the morrow.

The disquieting flurry was not without its benefits. It taught some men the meaning of caution and conservatism and showed them the folly of attempting to rear ladders to the skies. If the chastening and house cleaning is not wholly completed, the trade at least can now go about the work of readjustment with renewed spirit and, as always, the fittest will survive.

Quicksand as a Foundation.

Some day it will filter through some heads —if not those that now are directing the organization, then their heirs or assigns— that the American Automobile Association "got in wrong" when its foundations were laid so largely on club memberships and not individual memberships.

The capital made of it by their enemies and the damaging publicity given to the recent withdrawal of the Massachusetts Automobile Club should assist the filtration process even in the present administration, of which, however, there is sign. Club memberships, which means accession of members in large blocks, enable the officials to quickly lengthen the roll and during a boom period they are obtained with comparative ease, but when a club drops, a hole is created and the dropping creates a noise that attracts undesirable attention. A succession of holes and a succession of noises do an awful lot of damage, whereas the dropping of one individual member or several hundred of them never would be heard and would excite no notice, and the voids created easily might be filled.

It is unfortunate, but it is true, that sooner or later a majority of clubs weary of paying large sums from their treasuries, or one man with a grievance often is able to persuade them that they are weary of it, and then begins the trouble and the downward slide of the national organization with which they are afflicted. It is logic. It is history. The effect of their indifference to the teachings of experience and to the individual member, which the Motor World several times has remarked, may not be felt during the terms of the present A. A. A. officials or of their immediate successors—they will be able to retire with the proud boast of a "large membership"—but on those who come after them will fall the difficult task of practically rebuilding the organization.

What has happened in Massachusetts will happen elsewhere; if not to-day, then to-morrow. It is practically inevitable. As a foundation, club membership is akin to quicksand.

Unbiased Test of "Sixes."

All partisan feelings aside, the question as to the relative suitability of four and six cylinder motors for popular usage should be regarded in a tentative way pending a decision which ultimately must be based on actual service at the hands of a large number of unbiased users. In most of the discussion which is taking place on this subject the fact is overlooked that even granted superior characteristics for the sextuple motor in certain respects, other and even uneconomical considerations may serve to render the quadruple type more useful in the majority of cases. The fact that several makers of repute have abandoned the four cylinder motor in favor of the six does not necessarily prove that the six is in every way superior any more than the expenditure of immense amounts of money in the construction and installation of quadruple expansion steam engines in ocean liners and large power plants at one time, proved the advantage of using four stages of expansion instead of three. As in the present case, each system has certain advantages over the other. But the final question of their relative utility cannot be answered until both have been given a fair trial under circumstances affording an absolute basis of comparison.

All this being so, it is extremely gratifying to discover a maker who is willing to acknowledge himself open to conviction in either direction, while doing his best to perfect both types, and while at the same time striving also to produce two motors which shall be equivalent in all respects save in the one particular of the number of

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cylinders employed. It is not that the efficiency of the newer motor is in question, nor that its design offers problems of such a nature that they cannot be solved readily. It is not that the one, or two or four cylinder types of motor have outlived their usefulness. The whole matter hinges about the final acceptance or non-acceptance of the sextuple motor by the user as being, all things considered, best for his purposes. The maker who places himself in a position to test the "roadability" of each type on a thoroughly comparative basis, loses nothing by his conservatism in not advocating either to the exclusion of the other, and finally discovers himself able to cater to popular demand which ever way it swings.

It is noteworthy that the first official American road test of a car using benzol has taken place. This and all other attempts to develop newer and more economical grades of fuel than gasolene are praiseworthy and much to be encouraged. At the same time it is a pity that organized bodies, such as the engineers and some of the larger clubs, do not take a more lively interest in such tests and in addition to stimulating popular interest by organizing competitions and road trials, establish a well-organized system of laboratory investigation. Much of the alleged experimental work carried on in this country in connection with the automobile movement is of small consequence practically speaking because directed with too little regard for theoretical exactitude.

His friends who handed out the press notice meant well and the young man himself is not to blame, but they performed doubtful service when they heralded the recruit to the ranks as being "peculiarly qualified" for automobile work because of his having enjoyed a college engineering course and three months' service in the repair shop of a local garage. A college course and three months in a repair shop! It is calculated to make some men in the trade smile a very reminiscent smile.

Possibly if the promoters of the proposed Westchester road race had "showed down" a little earlier, they might not now be put to it to secure sufficient entries to prevent to project from falling through. The lack of entries indicates also that the trade was not crying so loudly for such an event as was made appear.

Rim Equipment of Taxicabs.

Editor of The Motor World:

Allow us to call your attention to a statement made in a recent issue of your paper entitled, "Success of the Taxicab Service."

You state that the New York Transportation Co.'s vehicles are equipped with Midgley rims to enable them to remove tires quickly for repairs.

Not a single New York Transportation Co.'s vehicle is equipped with Midgley rims, but on the other hand, 25 of these vehicles are equipped with the Goodyear universal rim, which the New York Transportation Co. will tell you has been found to be eminently satisfactory in every test they have given it. We might add to this that these Goodyear universal rims are equipped with Goodyear detachable tires which have averaged also 4,000 miles up to date, with repairs approximately $30 for the entire lot of 100 tires.

Inasmuch as you devoted considerable space to your very interesting article in connection with the taxicab service you will probably be willing to correct your statement as to the equipment of the New York Transportation Co. and further enlighten your readers regarding tires with the information we give you herein.

GOODYEAR TIRE & RUBBER CO.

[Upon being asked specifically concerning the rim equipment of his company's gasolene taxicabs, Secretary Palmer, of the New York Transportation Co., explained that in his earlier interview he had stated that the cabs were fitted with Midgley rims without investigating their manufacture but rather in the generic sense of detachable equipment. Investigation, however, discloses that the present rim equipment consists of 25 sets of Goodyear universal rims and 25 sets of Firestone universal rims.]

In the Retail World.

Stanley & White are building a garage in Church street, Whitman, Mass. Its dimensions are 40 by 70 feet.

The Westworth Motor Company has established a new agency at Euclid avenue and Mayfield road, Cleveland. The Ford and Mora cars will be carried.

Charles Hendy, Jr., who was formerly in the life insurance business in Denver, Colo., has set up in the automobile trade there at 1552-4 Broadway. He will handle the Ford.

P. C. Long is building a three story garage with a frontage of 63 feet at 207-209 West Ninety-eighth street, New York. The construction will be fireproof re-inforced concrete.

C. W. Risden, of Los Angeles, Cal., who has sold motorcycles to considerable advantage in California, has added automobiles. The Brush runabout is his acquisition.

The Nock Automobile Company opened its new and commodious garage in Providence, R. I., last week. It is located at 486-488 Broad street, where the Stoddard-Dayton will be exploited.

The Maxwell Company has opened an agency in Worcester, Mass., at 84 Mechanic street. It will be in charge of Melvin E. Dixon, although the establishment will be under the supervision of Lucius S. Tyler of the Boston office.

The Ohio Motor Car Co., Cleveland, moved into its new quarters in the Otis building on upper Euclid avenue, last week. The building has been entirely remodeled to make an up-to-date garage and sales rooms for the company.

The Worcester Motor Buggy Co., which has been formed at Worcester, Mass., to sell several lines of cars, has elected the following officers: President, W. J. Woods; secretary, Edward L. Caton, and treasurer, John P. Coughlin.

William Ehlers has purchased the interests of Joseph Seaman, who with Percy Duerr has handled the Maxwell in Davenport, Ia. The style of the new firm will be Ehlers & Duerr and a new garage will shortly be built on Fourth street.

The handsome new garage recently erected by the L. S. Gillette Company at Hennepin and Harmon place, Minneapolis, has been purchased outright by the Barclay Automobile Company, which occupied it. The consideration mentioned in the deed was $32,000.

Pittsburg has another automobile agency —the Pittsburg Automobile Co., which has located at Grant boulevard and Seventh avenue. The company, which will handle Thomas cars exclusively, this week is holding a show in the new salesrooms, in the nature of a house-warming.

COMING EVENTS

February 1-8, Providence, R. I.—Show in Providence State armory.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory.

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association show in Central armory.

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

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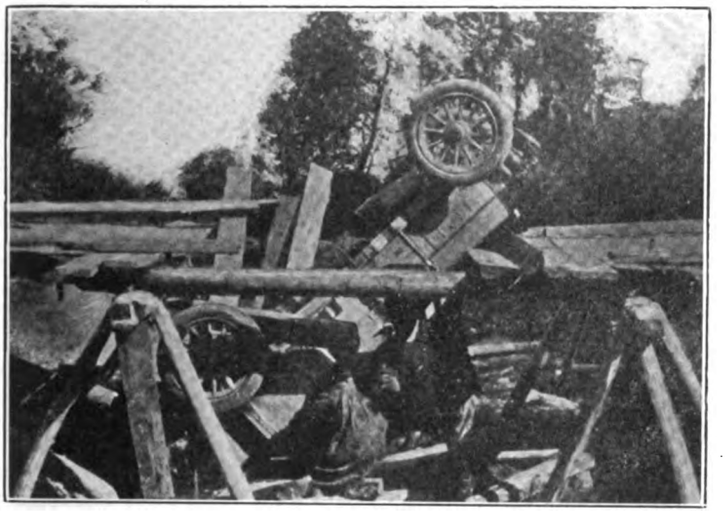
FRUITLESSNESS OF FREAK RACES

Wherein the Pekin-Paris Run Failed—What It Forecasts for the Proposed New York Paris Contest.

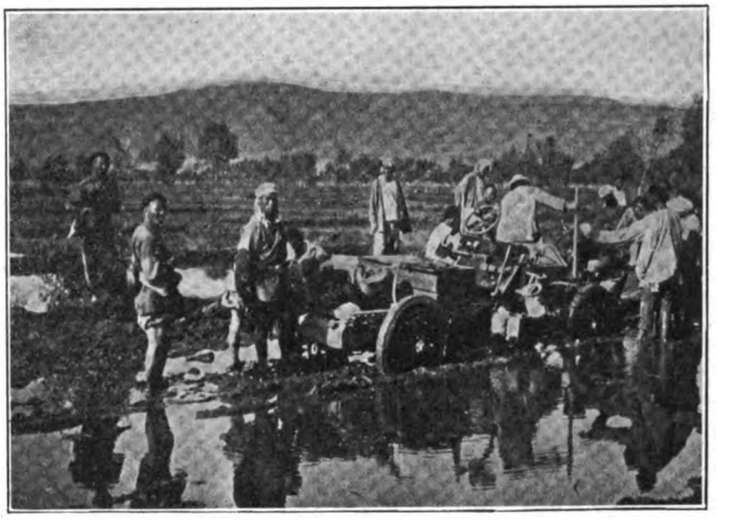
Effervescent but evanescent Parisian enthusiasm for the proposed New York to Paris "automobile race" has subsided to a sober consideration of its practicability and the more serious study that is given it, the more its probability dwindles, as a bona-fide undertaking. That as a race for automobiles unassisted by other power it is an impossibility, even granting the use of boats for Bering Strait and for ferrying the rivers, is becoming apparent, both by the growing information concerning the topography of the northern portions of the itinerary and the facts that are being elicited concerning the famous Pekin-Paris race which has been held up by its promoters as an evidence of the feasibility of the later project.

The very honesty and frankness of the record of that brave adventure, as told in his recently published book by Luigi Barzini, who accompanied Prince Borghese, shows it to have been a sincere and creditable enterprise on the part of the contestants, but the experiences of the latter nevertheless establish the fact that automobiles cannot accomplish the impossible and that in going from Pekin to Paris the machines were at times just like so much freight that had to be moved or transported Only a distorted conception can accept such features as anything but contrary to the usual understanding of what constitutes an "automobile" race, and certainly of no value as indicating the capabilities of the motor car.

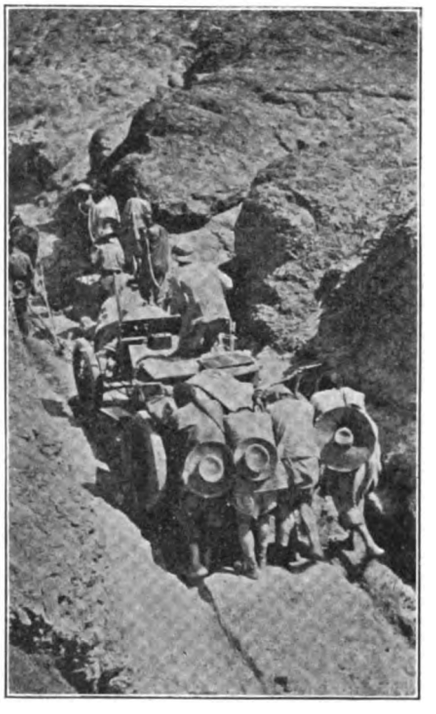
During some 120 miles that the car of Prince Borghese was being pulled by mules and horses, or pushed and carried by coolies and laborers, Barzini had plenty of time to take pictures of the machine's plights. As shown in the accompanying illustrations, there were many times when progress was not dependent upon the power or virtues of the automobile itself but upon the available facilities in mules and men for moving heavy freight through certain districts. The trip made clear that where conditions were suitable the automobiles could run, and where the conditions were unsuitable, they could not. To propose a race where motor cars cannot go on their own power would open the way for a contest up Mt. Blanc or Mt. McKinley, where the winning car would be that preceded by the best mountain climbers to rig up the necessary tackle and windlasses to draw the machines bodily to the top.



HOW THEY WENT THROUGH, NOT OVER, A BRIDGE



HOW THEY DIDN'T PROPEL THROUGH BOGS



HOW THEY DIDN'T CLIMB HILLS

Compared with the so-called New York to Paris "race," the Pekin-Paris would be but a pleasant little excursion, and despite the gravity of Le Matin, the publication fathering the project, in describing the rigors of the journey, it is doubtful if it realizes what it asks the competitors to attempt. As showing, however, that it is not wholly insensible to the difficulties to be encountered in such an undertaking, Le Matin publishes great quantities of advice to the prospective contestants, relating to the best preparations for the trip. Regarding construction and equipment the promoters of the race have this to offer:

"A short chassis is preferable, one of 30 or 40 horsepower. The air intake of the carburetter should be supplied with a warmer. This warmer will thaw the air at the moment of starting and thus save time. This can be accomplished by affixing a thick tube to the air intake, this tube passing outside of the automobile and being adjusted to a lamp, so that it can be heated red hot. The air intake will thus be heated by conductibility. A special tap should be arranged so that the tube conducting fuel to the carburetter can be completely emptied, so that the motor can be heated by means of a little oil ignited in a metal plate under the motor.

"Spare rims and tires should be placed in the middle of the chassis above the reservoirs. Coffers for food supply, clothing and spare parts should be of such shape as to fit in between the spare rims and tires. The driver's seat should have as cushions the three sleeping bags. There should also be a special hood, furred outside and in, long enough to descend to the waist of the driver, who is being relieved so that he can sleep while his comrade continues the course. The third seat in the middle of the chassis should be left unoccupied and placed at the disposition of correspondents of the organizers, who will pass from one machine to the other in the course of the voyage. Immediately over the chassis there should be a series of at least five fuel tanks, each ca-

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pable of holding as much as the usual large pressure tanks in current use.

"In San Francisco, in stores which make a specialty of such merchandise, will be found everything necessary for travelers going to Alaska. This equipment, for the most part, will be better than that which you could secure in Europe. The list includes a revolver and Winchester rifle, felt boots, rubber hip boots, moccasins, fur mittens, sheepskin sleeping sack, picks and shovels, white bear oil for greasing the face and body. Native dogs should be taken on at Valdez. From Europe should be taken yellow goggles with double lenses mounted in wood and bordered with fur or silk, the whole united in a fur mask covering the face; nine pairs of woolen stockings, superposable, so that three pairs can be worn at a time; heavy flannel shirts, boxes of preserves, a compass, silk tent, and Nansen stove.

"Wheels should have removable rims. For traveling on ice pneumatics should be replaced by metallic types supplied with steel creepers. For traveling on snow a wicker platform of six square metres, bordered with wooden runners, should be fixed under the machine. This will support an automobile of 2,000 kilogrammes. The wheels, in case of soft snow being met with, could be supplied with wide wooden rims of water wheel formation. This equipment could be in use only in certain portions of the United States. In Alaska it would be useless, as the snow there is frozen hard. All pneumatics should be vulcanized in order to resist the great cold."

Speakers for the A. C. A. Banquet.

That there will be a large attendance at the annual banquet of the Automobile Club of America on January 25 was assured long before the listing of reservations closed on the 15th inst. The banquet hall in the new club house has capacity for 361 covers, and it is probable that every place will be occupied. Incidentally the banquet will be a sort of christening of the new home of the club.

As a tribute to the claim of France to being the birth place of the modern motor car the French Ambassador, Jules Jusserand, will be the guest of honor. Among those who are to furnish the "flow of soul" on the occasion are Senator Chauncey M. Depew, Augustus Thomas, Job E. Hedges and Patrick Francis Murphy. The committee is composed of A. R. Shattuck, chairman; Dave H. Morris and O. A. Parker.

With good roads as its slogan the Youngstown (Ohio) Automobile Club was organized last week. The following officers will guide the new club's destiny: President, James A. Campbell; vice-president, John R. Squires; secrtary-treasurer, George L. Fordyce; trustees—J A. Campbel, John R. Squires, Dr. W. H. Buechner, C. A. Cochran, Dr. C. R. Clark, George E. Day and C. B. Klingensmith.

JERSEY CLUBS FRAMING NEW LAW

Twenty of Them in the Movement—Their Delegates Outline Important Amendments to the Frelinghuysen Act.

Representatives of twenty automobile clubs, comprising 2,700 members, met at Trenton, N. J., last Thursday, 9th inst., and thrashed out the question of probable automobile legislation in New Jersey during the present legislature. It was a special session of members of the Associated Automobile Clubs of New Jersey, and the discussion which followed the plan of action suggested at an informal meeting of representatives of the various clubs held in Newark, resulted in the decision to draft and have introduced amendments to the present Frelinghuysen law, which has been in operation for a year.

Radical changes in the Freylinghuysen law are asked. One of them is that automobilists registered in other States be allowed to tour in New Jersey for a period not exceeding ten days, and that all licenses shall expire on the 31st day of December; further, that license tags be furnished in uniform style by the State.

One of the most important things asked for is a law requiring all horse-drawn vehicles to display lights at night, which, if passed, doubtless will tend to lessen accidents resulting from non-observance of this. It is proposed also to make it a misdemeanor for an intoxicated person to drive an automobile; to make it a misdemeanor to throw glass, tacks or other tire destroying substances in the road; to require all license fees, and so forth, to be devoted to road repairing; to require all justices to report fines to State authorities, and to abolish personal registrations.

Summarized the amendments desired to the present law, and which will be presented to the legislature in session are as follows:

First—All horse-drawn vehicles to carry lights at night.

Second—Automobilists of foreign States to be given ten days' right to tour State without registering there.

Third—All licenses to run out December 31 of the year and tags to be furnished by the State.

Fourth—A higher fee for licenses to go to the highway commissioner for road repairs.

Fifth—Making it a misdemeanor for a drunken man to drive a machine, and for any one to throw glass or other brittle substance on the road.

Sixth—All fines must be reported to automobile inspector the day fine is imposed and all moneys from fines turned in within thirty days.

Seventh—Abolition of the personal registration idea, thus saving State about $30,000 for maintaining officers over State.

Buffalo's Shakedown Declared Illegal.

Buffalo's automobile tax ordinance received a knockout blow on Wednesday last, 8th inst., when the Appellate Division announced its decision in the locally famous Dai H. Lewis automobile tax test case. Judge Hodson's decision that the Buffalo automobile tax was contrary to the State law is upheld by the Appellate Division. It may be remembered that when the Buffalo automobile tax ordinance went into effect it was strongly opposed by the Automobile Club of Buffalo, and in order to make a test case Dai H. Lewis, secretary, offered himself as a martyr, and by refusing to pay his tax got himself arrested. He was prosecuted by the city in the Municipal court, and ex-Judge Kenefick, his attorney, made the plea that the local ordinance conflicted with the State act in that it resulted in a double tax. Hodson upheld this contention and the city appealed with the result that the Appellate Division has upheld the decision, resulting in a victory for the automobile club.

Another Tangle Under Bay State Law.

The latest disputed interpretation of the Massachusets State law relating to automobiles is likely to develop some fine legal hair splitting when the resultant appeal case is argued. Charles E. Whitten, of Lynn, was fined $15 by Judge Lummus in the local police court for operating an automobile without proper registration numbers on the side lamps. Whitten, who conducted his own case, contended that the car was registered in Pennsylvania, where the law does not require the rear or side light numbers; furthermore, he contended, he had the right under the Massachusetts law to operate a non-resident car seven days after bringing it into the State before making registration in Massachusetts. Judge Lummus ruled that the seven days of grace apply only to a non-resident car driven by a non-resident owner, and accordingly adjudged Whitten guilty and imposed a fine of $15, as stated above. An appeal was taken.

American Consuls not Immune Here.

Magistrate Steinert, a New York justice, decided last Friday, 10th inst., that only consuls in the employ of foreign governments are immune from the speed laws, when he held Caldwell S. Johnson, of New Haven, who is connected with the United States Consular Service, in $100 bail in the Morrisiana police court for trial in Special Sessions on the charge of speeding in his automobile. Johnson had protested at his arrest in Pelham Parkway, exhibiting official papers and asserting that he was on his way to Washington to keep an appointment with President Roosevelt. His excuse did not go with the magistrate, however.

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"SIX" AND "FOUR" IN LONG TEST

Apperson Operating Both Types in Competitive Tryout Under Even Conditions—Relative Advantages.

A frank and decidedly novel turn is given to the much-discussed question of the relative suitability of four and six cylinder motors for popular use, by the open avowal of the Apperson Brothers Automobile Co., that with the best possible means of study and comparison at hand, their engineers have as yet been able to arrive at any definite conclusion as to which is the better of the two. For some little time two types of motor have been built, one a four and the other a six, which have about the same aggregate piston area and are otherwise similar, and may be used in the same chassis. A close observation of the performances of these two types is now being made with the idea of finally determining which is the better for general work.

It is frequently the case that six cylinder motors are made by merely extending the construction of an established quadruple design by adding two more cylinders to it. Comparisons drawn between the old and the new in such a case are manifestly unfair, even when nominal allowances are made for the difference in power. In building two motors of essentially the same power and weight, however, and fitting them into the same chassis, the Apperson brothers have placed themselves in a position to obtain the most truthful and extensive data which it is possible to gather, since the results so derived will be from practical use quite as much as from laboratory study and theoretical calculations alone.

"We believe that 'the proof of the pudding is in the eating.' We believe that both the 'six' and the 'four' each have advantages not possessed by the other, and it is our purpose and intent to find out, if possible, which of the two possesses the greater advantages, including power, speed, life of motor, cost of maintenance, and repairs," remarks Sales Manager Strout, of the Apperson company, in this connection. "Some factories have turned out four cylinder motors that have not been practically successful and it might be 'good business' for them to jump into the six cylinder field, for a while at least. But it is not fair to compare the showing of any 'six' against the showing of a 'four' that has not been entirely successful and satisfactory.

"For some years we have been building a four cylinder automobile motor, with cylinders of 5½-inch bore and 5-inch stroke that has been entirely successful and satisfactory to all concerned. The total piston area of this four cylinder motor is 95.0334 cubic inches. Many months since we designed and built a six cylinder motor with 4½-inch bore, and 5-inch stroke, total piston area, 95.4261 cubic inches. It will be noted that the total piston area of this six-cylinder motor is only .3927 of a cubic inch greater than the total piston area of our four cylinder motor. The six cylinder engine weighs approximately 75 pounds more than the four cylinder engine, and occupies only 2½ inches more space under the hood. Both engines go into the identically same chassis, and barring the small additional weight of the 'six' engine itself they must propel the same number of pounds of chassis and body.

"In our case, we now have a four cylinder car, and a six cylinder car, of the same weights, with the same carrying capacity, operated by the same drivers under the same conditions. We have been driving our 'six' in competition with our 'four' only four or five months, and so we cannot yet arrive at accurate conclusions. We believe, as stated above, that each type has advantages over the other type, but right now, although we are building and delivering both 'sixes' and 'fours,' we are under the impression that the disadvantages of the 'six,' as contrasted with the 'four," outweigh its advantages. But we cannot yet make a definite decision and statement, based on our experiments and experience, that we would be willing to 'stand on' as final. At the end of the present season we will be in a position to know positively the relative cost of maintenance, of repairs, and of efficiency of the two types of engines, when they have the same piston area, and when they are operated under the same weights and conditions."

New Type of Sheet Metal.

"Alumaloyd" is one of those terms which tells a great deal in a very few letters. It signifies a special analysis metal sheet coated with aluminum-alloyed metal which by the treatment afforded it is absorbed, not spread over the surface, and thus serves the purpose of a thorough protection to the base metal as well as a surfacer. The Stark Rolling Mill Co., Canton, O., which has been producing Alumaloyd for some little time, is now making a specialty of supplying it to the automobile trade. For this purpose it is particularly suitable as used in the construction of bodies, dashes, guards, bonnets, battery-boxes, drip pans, mufflers and the other purposes to which sheet metal may be devoted, particularly where it is desirable to retain a good degree of finish in spite of adverse conditions. Because of its ready-to-use quality it is an economical stock to carry, no finishing being required before painting, while it also may be used to advantage for die-work. According to the makers, it can be stamped, pressed, drawn, double-seamed or soldered—all without affecting the quality or value of the surface. Almost as a matter of course, it is produced in a wide variety of sizes and gauges adapted to the many uses for which it may be required.

HARTFORD PROUD OF HER SHOW

Annual Exhibition Opened Brilliantly and is a Beautiful One—List of the Exhibitors and Cars Staged.

Hartford had reason to feel real proud on Tuesday night, 14th inst., for the annual show of the Hartford Automobile Dealers' Association opened in Foot Guard Armory in a veritable blaze of glory "The Big Show," as the promoters termed it, has been the topic of conversation in Hartford for weeks, so it is little wonder that a large crowd of first-nighters visited the armory when the doors were opened at 8 o'clock Tuesday evening.

"The New York show in miniature"—that's what the Hartford dealers like to call their annual exhibition, and in justification of this assertion they point with pride to the fact that the uniformed attendants scintillate in the same resplendent regalia that enfolded the attendants at the Madison Square Garden show, from the red military caps and coats, and white riding breeches to the black leather puttees. And if further proof of the semblance of Hartford's show to the last one in Manhattan is needed, they will tell you of "Society Night," Thursday, when the price of admission will be doubled and the tickets "limited" to 1,000 of the elite, although, as one of the promoters said to a Motor World man some time ago: "If fifty thousand people come on Society Night they can get in, for we wouldn't want to rob them of the chance of their lives."

In a decorative sense the promoters have "spread themselves," and the interior of the armory really presents a beautiful picture The general color scheme is green and white, and a great canopy in this conceals the ceiling, while the side walls are prettily covered by delicately tinted fabrics. The feature is the arbor in which the band is hidden. It is in the form of a bower, located on the uprights 14 feet above the heads of the spectators. Radiating from this flowered bower are long streamers of wires covered with smilax and studded with thousands of incandescent lights. The wires droop gracefully to the side walls and give a Christmassy effect to the whole.

Every inch of space is occupied, including the basement and balconies. The cars are shown for the most part by local representatives, the complete list of exhibitors being as follows:

Main Hall.

Electric Vehicle Co., Columbia gasolene and electric cars; The Miner Garage, Pierce, Buick and Knox; R. D. and C. O Britton, Maxwell; Capitol Auto Hack & Livery Co, Mitchell; Palace Automobile Co., Autocar, Thomas and Oldsmobile; L. D. Fisk, Corbin; Connecticut Steel & Wire Co., Reo;

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Elmer Auto Co., Ford and Rambler; Brown, Thompson & So., Packard, Stevens-Duryea and Cadillac; Robert Ashwell, Franklin; T. Dudley Riggs, Isotta Fraschini and Simplex.

Balcony.

Jones Speedometer Co., Jones Speedometers, etc.; Barton, tires; Post & Lester, sundries; The Aetna Life, automobile insurance; Travelers' Insurance Co, insurance; Visor Knitting Co., clothing; G. W. Fuller Co., trunk racks, trunks, etc.; New England Automobile School, tuition; Lombardi Speedometer Co., speedometers; A. L. Foster & Co., clothing; W. H. Wiley & Son Co, leggins, tire covers, etc.; Vacuum Oil Co., lubricants.

Basement.

A. L E. Rhodes, automobile washers; Harriman Motor Works, motors; Auto Body & Top Mfg. Co., bodies and tops; Atlas Motor Co., Atlas trucks; Lighting Specialty Co., specialties; G. A. Snow, motorcycles.

Chicago Schedules Three Events.

A 1,200 miles reliability run, covering four days, will be the star feature of the 1908 card of the Chicago Motor Club. This decision was reached at a meeting held last Friday, 10th inst. The dates selected are June 24, 25, 26 and 27, and the run will require a car to do 300 miles each day, which should make it the most strenuous endurance run ever promoted in America. The desire for earlier dates for its contests was manifested at the meeting. The Algonquin hill climb was set for May 15th, three months earlier than usual, and the annual economy run was booked for August 14th instead of in September. The contest committee also discussed holding a reliability test for high-wheeled motor buggies, but no definite decision was arrived at.

The Blanket Insurance of Automobiles.

Among new legislation affecting insurance recommended to the Massachusetts legislature by its joint special committee on insurance is a provision to enable persons having insurable interests in antomobiles to obtain insurance under one policy against the risk of property damage from all the hazards encountered in their use, this policy to be issued under the inland navigation and transportation form of policy. This recommendation aims to have incorporated in the laws authority for a practice already permitted by the Attorney General of the Commonwealth, as was stated in a recess hearing before the special committee late last summer, reported in the Motor World at that time.

Grand Rapids Chauffeurs Organize.

Employed drivers of private automobiles in Grand Rapids, Mich, have formed the Grand Rapids Chauffeurs' Association with these officers: President, Jacob S. Baker; secretary, P. A. Donaldson; treasurer, W. M. Andrews.

MORRELL AND MOORE EXPLAIN

Chief Sponsors of Westchester Road Race Disclose "What's What"—Must Have 25 Entries or no Race.

If there are not 25 entries in hand by February 1st, there will be no race for stock cars on the roads of Westchester county on April 24th.

This statement comes directly from Robert Lee Morrell, Esq.—he is a lawyer—who is chairman of the Automobile Manufacturers' Committee, which has the project in hand.

The entry list was to have closed on Wednesday last but as but 13 were then in hand, the date has been extended in order to give the hesitants more time in which to decide whether such a race is worth $1,000 to each of them. Of the 13 entrants in hand six are foreign cars, and of the others three are entered by the Cleveland concern which has been most anxious for the contest.

Mr. Morrell's statement followed a period of excited wrath, for the Motor World's suggestion that it were time for a showdown considerably aroused the gentleman. It induced the chairman to call a meeting of the committee, at which he read the Motor World's editorial with due emphasis, and while Morrell did not say so in as many words, he intimated quite generously that he would be made very happy if none of those present would advertise in this publication. But the editorial effected its purpose and a complete showdown resulted. While Morrell explained his position to one Motor World man, Thomas F. Moore, the secretary of the committee, produced letters and records that prove that Morrell and Moore do not constitute "the whole thing," as everything seemed to indicate, practically no other names having been permitted to see the light. It develops that the Automobile Manufacturers' Committee is made up of the following tradesmen, all of whom either verbally or by letter authorized the use of their names: Benj. Briscoe, C. A. Singer, Charles Schmidt, E. R. Hollander, Henry Ford, H. A. Lozier, Fred P. Brand, Andre Massenat, Hayden Eames, F. B. Stearns, Walter Allen, Paul Lacroix, A. H. Whiting, James Joyce, Percy Owen, W. H. Hurlburt, G. C. Johns, A. W. Church, A. L. Riker, E. T. Birdsall, H. C. Maxwell, Alden McMurtrie, G. S. Weidley.

In addition, there is an "advisory board" made up of newspaper men.

As for the fixed responsibility which the Motor World insisted should be made clear and which was the vital point in issue, one of the gentlemen concerned stated that the mere fact that the committee was not a closely knit or incorporated body made every one connected with it individually responsible, which he held was the best sort of responsibility. Mr. Morrell, however, placed the matter in a different light. He guessed that as he is worth about a million dollars his responsibility could not be questioned, but as a better safeguard he said it is the intention to take out an indemnifying bond to the amount of $100,000 which it is believed will be amply sufficient for all purposes and which will protect every one connected with the race except the entrants. In signing the entry blank the latter absolve the promoters and agree to bear their own burdens.

All of those concerned prefer that the so-called Metropolitan Automobile Association, which first undertook the road race for stock cars, be passed over with the fewest possible words. Moore, who "organized" it merely by printing a letterhead, now frankly admits all that the Motor World said regarding it was true—that as an association it was without shadow or substance, and was a mere "frame-up" for the purpose of promoting a hill climbing contest for the exploitation of a certain car. Mr. Moore laughs in his good natured way at mention of the "reorganization" of the "association," which was duly recorded by several members of the "advisory committee." In the "reorganization" it was stated that Mr. Morrell had become "chairman of the executive committee" and Job E. Hedges, "chairman of the legislative committee." Its disappearance almost immediately thereafter and the sudden creation of the Automobile Manufacturers Committee served to throw a suspicious mystery around the whole road race project. Moore states that he has been voted a salary of $50 per week, none of which has he drawn, and that all accounts are to be audited by a sub-committee. If any surplus remains the actual starters in the race will have their entry fees rebated up to $500 each.

In talking of his Metropolitan Automobile Association, Moore tells a good story of his abortive effort to secure a course on Long Island for the road race. It appears that another New Yorker became possessed of the same ambition and had arranged to meet the supervisors of Nassau county in order to obtain the necessary permission. Moore heard of it after the other fellow had departed for Long Island, and procuring an automobile he went posthaste to Mineola. Although the rival promoter had a long start, his car went wrong en route and Moore reached the supervisors and told his story first.

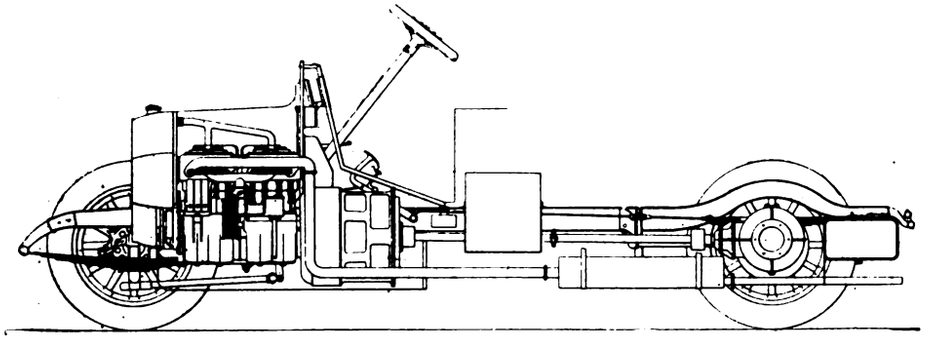
He also relates a laughable incident that attended his efforts to secure the course in Westchester county. In one place the farmers were obstinate because they feared the race would interfere with the delivery of their milk supply on the morning of the contest. Moore solved the problem by agreeing to pay fifty cents for each can of milk that might remain undelivered. It goes almost without saying that the farmers' obstinacy immediately melted.

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CLUTCH AND BRAKE POWER EQUAL

Transmission Features of a New French Gasolene-Electric Car—Wonderful Simplicity of the Control.

Though comparatively slow in development, and even yet but little known in a practical way, there are nevertheless many reasons to believe that the combination gasolene-electric vehicle, or in other words, the gasolene car with an electric transmission will eventually become the most familiar and acceptable in popular useage. Theoretically it possesses many advantages impossible of attainment with the purely mechanical transmission and even though tremendously expensive in cost of development, it is reasonable to suppose that once brought to a moderate degree of perfection it may be produced at a cost which is inconsequential, all things considered. Europe is doing much more in this direction at the present time than is America. One of the neatest and most pleasing designs yet produced, judging solely by its specifications, is the new G. E. M. car, which has just been introduced by the Société General d'Automobiles Electro-Magnetic.

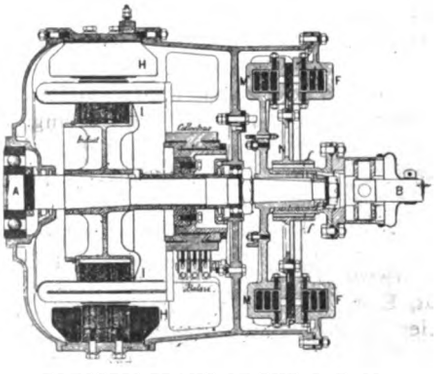


CHASSIS OF THE G. E. M. GASOLENE ELECTRIC CAR

In principle the transmission of this vehicle comprehends the use of a direct-connected generator, magnetic clutch and clutch brake all enclosed within a single casing, and operated in conjunction with a 24-cell accumulator which is in parallel connection with the main line so that it serves the purpose of an equalizer and may be used for starting the engine, assisting it when operating under heavy loads, and is also subject to charge in the intervals when the drag on the clutch is relieved. The control of the car is marvelously simple, consisting of two hand levers mounted above the steering wheel, and two pedals. Of the former, one is used for starting and reversing, the speed changes being brought about by the movement of the other. Of the two pedals, one serves to apply the clutch or the magnetic brake as the case may be, while the other applies a pair of internal brakes on the rear wheels in the ordinary way.

The general layout of the vehicle is perfectly ordinary and modern. As will be seen from the accompanying illustration, the arrangement of the motor and transmission in the pressed steel chassis, as well as the suspension and axle mounting follow closely the lines of the ordinary touring car of moderate power and weight. The motor, which is of the four cylinder vertical pattern, has cylinders of 3 15-16 by 4¾ inches bore and stroke, and is rated at 20 horsepower at the normal speed of 1,400 revolutions per minute, though its maximum output is probably nearer 25 horsepower. It has interchangeable, mechanically actuated valves, drop forged steel connecting rods, light pistons and crank shaft mounted on three large ball bearings. Ignition is by high tension magneto, the ground switch being under the control of the master controller on the steering column.

It is governed automatically, this feature being the unique element of the carburetter which otherwise is of normal construction. The throttle, instead of being actuated in the ordinary fashion, is governed by a soft iron core which is retained by a spring and plunges into a double-wound solenoid under the influence of its magnetic attraction. One of the two windings of the solenoid, which is of fine wire, is connected in shunt with the main current line. The other, which is of heavy wire is in series with the ground of the battery current. The plunger is thus affected by a differential action in the two windings and is extremely sensitive to current conditions in the system. The action of the solenoid and so of the motor, is to equalize the action of the battery and dynamo currents as far as possible.



ELECTRIC PLANT OF THE G. E. M.

The chief organ of the electrical equipment consists of the dynamo which is of the 8-pole, shunt-wound type, as shown in the accompanying section. From this it will be seen that the field, H-H, consists of a magnetic iron spider centered in an aluminum frame which is bolted directly to the crank case of the engine. The armature, I, is keyed directly to the crank shaft, A, and is built up on laminations in the ordinary way. Three pairs of brushes are used, the brush holder being mounted in such a way as to be readily accessible for the replacement of the brushes. The maximum output of the machine is something like 200 amperes at 48 volts, or nearly 10 K. W., its normal output, however, averaging nearer 7, or between 9 and 10 electrical horsepower.

The arrangement of the clutch and brake are exactly similar, both acting on the same clutch disc and in the same fashion. Hence the braking power is exactly equal to the clutching power and may be controlled in the same way. The rotating field of the clutch, M, comprises an annular ring carrying a number of coils which receive current through a pair of collector brushes. The clutch disc, P, is suitably mounted in the casing to revolve independently of the crank shaft, and is connected with the differential through the ordinary form of cardan shaft, B. The field coils of the brake are similarly mounted, but are fixed to the frame of the transmission, as shown at F. Thus the magnetic drag exerted on the clutch disc whenever current is sent through the adjacent coils may be directed to causing the disc to turn with the revolving field of the clutch, or to retarding its motion according to whether the current is sent through the moving or stationary coils.

The control system has been outlined already. To start the machine it is necessary only to place the starting switch in the first position, when the battery current will be directed through the dynamo thereby setting it and the crank shaft in motion. A further movement of the starting lever serves to accelerate the group, at the same time cutting in the magneto and igniting the gas in the cylinders, the throttle being held open as a result of the current distribution. The controlling pedal being released from its midway position, the current is then directed into the clutch thus starting the machine, when the speed may be controlled by varying the strength of current in the dynamo fields. Similarly by depressing the pedal to its full extent, the current is switched over into the brake, when the retarding power becomes as strong as that of the clutch. For reversing, the starting switch is thrown over into its other extreme position when the battery alone is used for the time being. The clutch and brake functions act in exactly the same way under these conditions as for forward motion.

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FLY WHEEL'S GYROSCOPIC ACTION

Possible Effects on Ultimate Behavior of Cars Described by an Observer—Some Other Possible Explanations.

A subject from which the non-technical reader has been happily relieved for some little time is that of the effect of the possible or probable gyroscopic action of the fly wheels of the motor on the life and action of the car. This matter at one time troubled motor engineers not a little, but was finally laid aside with the conclusion that whatever might be the gyroscopic effect it was not of sufficient importance to necessitate allowances being made for it in the design of the vehicle A thorough revival of the discussion is now threatened, however, by a communication recently published in an exchange, in which the writer claims to have observed a marked difference in the behavior of cars having right and left turning engines.

"I have noticed that the springs of a car driven by a right-hand revolving engine either touch the frame on the right-hand side or allow the tires to touch the wings on the right side, this usually taking place after the car has been driven some time and when well loaded, and driven over rough roads. The reverse is the case with a car which is driven by a left-hand revolving engine. The springs and tires then, under similar circumstances, commence to touch on the left side," is his startling observation.

"I have never required to strengthen or assist the springs of a left-hand revolving engined car, as, owing to my experience, such cars are or were all of low power, and the touching was slight I have often had to strengthen or assist the springs of various right-hand revolving engined cars. I have also had an occasional fracture of a leaf or two, taking place on right-hand revolving engined cars, all on right or off side, left-hand revolving cars excepted, all being low-powered, springs giving no trouble. I have also been unlucky enough to bend and fracture a few axles, all taking place on the right side of right-hand revolving engined cars, left-hand revolving cars again excepted, being low-powered.

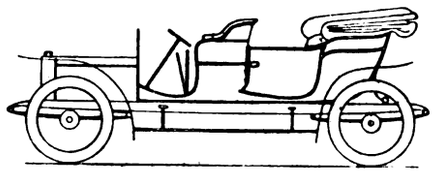
"I have noticed that the off side spring bolts and shackles on right-hand revolving cars show far more wear than their opposite neighbors. The reverse is again the case with left-hand revolving cars.

"I have often driven abroad, where the right-hand side of the road holds sway I still notice that right-hand revolving cars are weak on off side. . . . . The springs of a car driven by an engine whose fly wheel runs parallel to the road wheels never behave in any way out of the ordinary."

Some of the possible explanations suggested in accounting for these phenomena are: habitual running on one side of the road cambre, the constant weight of the driver on one side, regardless of the state of the load in other respects; the unequal thrusts, due to the piston impulses, and the pull of the steering gear. "All this might be applicable to right-hand revolving engined cars, but what about the left-hand cars?" he concludes. "I am inclined to think the root of the matter lies in the relation to the gyroscopic action of the fly wheel of the engine being conveyed to the springs and axles of the car."

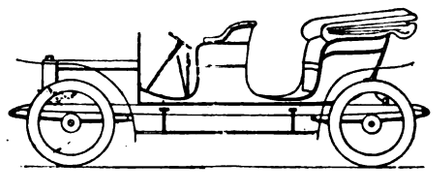
Victoria Body of Convertible Type.

During the last year or two the trend in the direction of the surrey and victoria types of body has been extremely marked, but never more so than at the present time when, both in the more luxurious of the open town cars, and in the lighter forms of open runabout of the two seated va-



riety, the spirit of these designs is constantly reappearing. While of great utility in some respects, and lending itself well to ornamental design, the open-sided body possesses considerable disadvantage when it comes to long distance running over country roads—due to the effects of dust, mud and wind. For the light touring runabout, this effect may be overcome in part by the use of rather high, straight sides. But for the victoria town carriage this is manifestly impossible, and consequently, that vehicle in its most attractive form is not wholly adaptable for touring or country use.

In keeping with the development of the convertible idea which also has seen no



small amount of development within a short time, a London garage proprietor has designed the body here outlined, which is intended to be equally suitable for city and country running, but which in its former capacity, carries all the elegance of the true victoria. To this end a set of removable doors are used which may be readily attached when required, thus giving to the car the appearance of the regular touring vehicle, and affording the occupants all the protection which the high sides of that type provide. When required for city use alone, on the other hand, the doors may be removed, leaving the open victoria, as seen in the second illustration, which in ease of access and general air of comfort and luxury probably is unsurpassed by any other type imaginable.

ABSORBENT OF SOUND IN THE HOOD

Suggestions for Supplementing the Effect of the Muffler—MeMthods for Making Hood Linings Fireproof.

While the advantages of properly silencing the noises of the motor are universally appreciated, it is generally believed that when a proper muffler is in use nothing further can be done to quiet a well designed machine. It is unquestionable, however, that the remarkably quiet performance of many of the more expensive automobiles arises not so much from any special provisions in the motor mechanism to silence the rattle of metallic parts as to the close construction of the hood. In this connection, it is noteworthy that in many other cases the hood acts as a sort of sounding board in accentuating the noise of the motor to an unpleasant degree.

Muffling the motor in this way, while done in effect on several machines which have tightly closing hoods, might be carried to a still further and more effectual degree by lining the hood with felt or some other sound absorbing material which could be suitably fire-proofed if required, and secured by means of a special heat-proof cement. It is probable that an asbestos lining would prove somewhat beneficial in this way, but there can be no question that a layer of thick felt would produce more satisfactory results.

In this connection, the Scientific American is responsible for the following method of compounding a cement for this purpose:

"Take 16 parts gutta percha, 4 parts cauotchouc, 2 parts pitch, 1 part shellac, 2 parts linseed oil. Heat the first until liquid and add the others in order, stirring thoroughly. Good glue, to which tannin has been added until the glue becomes ropy, is also useful for this purpose and cheaper, but will not stand so high a degree of heat; it is fairly secure up to 150 degrees F. Adding quick lime to ordinary glue will render the glue fireproof, but it will not sufficiently permeate the felt to fireproof the latter. The felt had better be soaked first in a solution of the following proportions: Boracic acid, 6 parts; sal ammoniac, 15 parts; borax (pure), 3 parts; water, 100 parts."

When for any reason a spark plug manifests a tendency to stick when it is desired to remove it, a good plan is to smear the threads with a paste made by rubbing into a small quantity of Albany grease as much flake graphite as it will hold. When the motor heats up the grease, of course, runs away, leaving behind it in the interstices of the thread, a thin coating of the graphite, which acts as a lubricant when it is desired to remove the plug, and secures its easy removal.

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EVILS OF SLIPPING THE CLUTCH

How They Affect the Multiple Disc Type—What is Gained by Increase of Clutch Surface.

Although multiple disc clutches are commonly advertised by the makers who use them as being adapted to withstand successfully an almost unlimited amount of slip the fact remains that clutch slip is not beneficial to any device of the sort at present in use, since any relative motion between the driving and driven parts is at the expense of a certain amount of friction of motion. Friction between moving parts always implies the generation of heat and abrasion to a greater or less degree, and it is a dubious fact that the clutch which is designed to slip seldom proves able to hold with any degree of certainty when a heavy load is applied.

In a general way the evils of slipping the clutch apply equally well to the disc and cone types. Much slipping grinds the surfaces together in such a way as to reduce the co-efficient of friction between them so preventing them from holding when required to do so. By increasing the amount of working surface in the clutch, as is done in the disc system, it is possible to increase the total amount of slip possible before destructive abrasion commences, and to do so to a remarkable degree. But the evil results of slipping are bound to remain after that limit has been passed, and to be just as important in their effects.

Two important points are gained by increasing the surface. First, the unit pressure on each infinitessimal area of clutch surface is reduced, thus reducing the tendency to abrasion without diminishing the holding power of the device as a whole. Second, the increase in surface also permits of more rapid cooling owing to conduction and radiation combined, as a result of which, the working temperature of the clutch is kept low and the tendency to abrasion counteracted in another way.

In this way the multiple disc clutch offers no new solution of the clutch problem, but merely an improved form of the old and familiar one. Its advantages are that with careful handling, such as might get good results from a clutch of almost any sort, it will last much longer and continue to give satisfactory results much longer than the plain cone type. When subjected to abuse, however, it is bound to give out, and though not apt to "set" as at present built, it is liable to abrasion to such a degree that a renewal of the surfaces will be required.

Such a renewal may be brought about by removing all the discs, grinding them down until a perfectly clean and uniform surface is presented, and reassembling the device taking care to readjust it both in spring and pedal or lever connections to compensate for the metal which has been removed and the consequent reduction in over-all length. As this is work which should properly be done on a suitable grinding machine, and involves considerable labor, it will be seen that the effects of careless handling are in the main more expensive than those involved in the maltreatment of the plain leather-faced cone clutch. The only requirement of that trustworthy arrangement is for a new stip of leather, which may be cut out and inserted by any mechanic with a fairly good degree of success.

It will be seen that though more expensive to build and more expensive to renew or repair, the greater life of the disc type affords a strong recommendation for it, especially as it will stand a greater amount of abuse without giving way than the older form, all things considered. By using good oil, however, and taking care to renew the supply at not infrequent intervals, washing all residue out of the case at the same time, the careful user will seldom if ever have to resort to any more strenuous measures of repair than an occasional polishing off of the plates and readjustments of the mechanism. It is even more important that it receive proper attention than is the case with the cone clutch.

Hillhouse Customs Fight Goes on.

In the hard fought case of J. T. B. Hillhouse, involving the question whether the owner of an automobile of foreign manufacture can be required to pay duty on the car a second time when he has kept it abroad a year and had it extensively repaired, a petition for a writ of certiorari has been presented to the Supreme Court of the United States by the Attorney General. The United States Circuit Court of Appeals for the Second Circuit held that duty could be collected only on the new part of the machine, but the government contends that it should be paid on the entire car. The case has been a long drawn out one and it was thought had been settled until notice of the action of the Attorney General was sent out from Washington last week.

Burglar Alarm for the Garage.

Along with the motor thief and the burgler who motors, comes the burgler of motor garages and their contents, who is becoming so much of a menace in England, as to have attracted the attention of the eager-eyed accessory maker. One of these enterprising individuals has recently perfected a special form of burglar alarm which consists of a whistle operated by compressed gas contained in a suitable tank. As installed in the private garage of the rural owner the apparatus is capable of giving an alarm which can be heard for a distance of several miles and one which, all things considered, is held to be more certain than the average electric bell combination.

COMMERCIAL VEHICLE TEST RULES

Program for the Coming Contest in France —Formula to Determine the Final Standing of Contestants.

The chief rules that will govern this year's commercial vehicle contest have been made public by the Automobile Club of France. There are to be eight classes, viz.: 1, vehicles carrying 50 to 200 kilogs. useful load; 2, vehicles carrying 201 to 900 kilogs. useful load; 3, vehicles carrying 901 to 1,500 kilogs. useful load; 4, vehicles carrying 1,501 to 2,000 kilogs. useful load; 5, vehicles carrying 2,001 to 3,000 kilogs. useful load; 6, vehicles carrying over 3,000 kilogs. useful load; 7, public service vehicles, 6 to 10 passengers; 8, public service vehicles over 10 passengers. No vehicle must weigh more, fully laden, than 4 tons per axle, the weight being arrived at by dividing the total weight by the number of axles.

The trial will comprise about 25 stages. Each stage will be divided into a number of sections. The average maximum speed, which must not under any conditions be exceeded in any single section, is fixed at 25 k.p.h. for all classes.

The final standing will be arrived at under the following formula:

$$\frac{T \times C}{P \times D}$$

, in which T represents time in hours; C the fuel consumption through the trial in francs; P the useful charge carried, to which will be added the weight of the vehicle body in kilogs.; D the distance covered in kiloms.

No speed above 20 kilometres per hour for Classes 1, 2, 3, 7, and 8, and of 15 kilometres per hour for Classes 4, 5, and 6, will be taken into consideration.

In regard to repairs, this section is divided into three categories, viz., (1) spare parts which can be changed at will; (2) stamped parts which must not be replaced except by duplicate parts officially stamped, of which each competitor may carry a certain limited quantity under the rules; (3) all other parts of the vehicle, not included in the above two categories, which may not under any pretext whatsoever be changed. The employment of pneumatics is forbidden, and no tire shod with rubber, or parts of elastic wheels, will be allowed to be replaced.

Neighbors Fight Against a Garage.

After Everett Mehrer had been stopped by the Building Department in his work of erecting a $4,000 garage at Chelsea, N. J., he secured a permit for a building 49x100 feet. Chelsea is a fashionable residential section at Atlantic City,, and there promises to be a pretty legal fight over the garage, as the Chelsea Protective League has determined to balk Mehrer's plan of building a garage in the midst of Chelsea's pretty cottages.

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AROUSED BY AN ENDURANCE RUN

Pennsylvanians See Necessity for Better Roads—Probability of New Turnpike from Allentown to Reading.

Two important results are likely to be the outcome of the Quaker City Motor Club's endurance run to Allentown, Pa., on New Year's Day, according to advices from that city. The first of these is the formation of a Lehigh County Automobile Club; the second, a free State turnpike from Allentown to Reading.

The Philadelphia club's event was a revelation not only to Allentown automobilists, but to business men and the public in general. It also opened the eyes of citizens with an eye to civic and industrial progress. Allentown has more than 400 owners of automobiles, a splendid showing in proportion to its population of 35,423. With more than 500 owners in Lehigh county it is in a position to organize a big automobile club.

Lehigh county has taken due advantage of the new State roads law, but all the new roads so far built run to the north of Allentown, into the cement belt. This also is practically true of the Walberts pike, the creation of John W. Eckert. In other directions no advantage has been taken of the State's liberality. It was just a trifle humiliating to Lehigh Countians to hear that the worst stretch of roads encountered on the Quaker City Club's run was between Allentown and Reading, and that the Lehigh roads were even worse that the Berks highways. This has brought about the movement for a State turnpike from Allentown to Reading, a distance of 36 miles, 12½ miles in Lehigh and 23½ in Berks. The chief obstacle to the building of State roads in Lehigh county has been the objection of the people of the townships, despite the fact that the townships need pay only one-eighth of the cost. The example set by the automobile run, however, has had a good effect in liberalizing views, and many of the farmers feel it is about time that permanent roads be built. Another leaven is the fact that many of the farms in the townships affected are owned by residents of Allentown, where there is a wonderful sentiment in favor of paved streets. Allentown can now boast 12 miles of asphalted streets, at an average cost of about $6,000 a block. This mileage of paved streets would be greater but for the fact that the municipality hasn't quite kept pace with public demand in the movement. Farmers coming to Allentown are of course delighted with the paved streets, and they have come to think that if city people can pay $6,000 for a block of good road, it isn't too much to spend $6,000 to $8,000 for a mile of good turnpike in the country, especially when the township need pay only one-eighth, the State and the county paying the rest. Of the proposed road about 3¾ miles would run through South Whitehall, 3 miles through Lower Macungle, and 5½ miles in Upper Macungle, Lehigh county, and the cost to the townships would not be more than $1,000 a mile, perhaps less. The total cost of the proposed turnpike between Allentown and Reading would be somewhere between $200,000 and $250,000, and could be finished with State aid in five years.

Two Police Wagons for New York.

Two automobile patrol wagons have been added to the New York City Police Department's rolling stock—one gasolene and the other electric. When it is determined which form of power is the more practical for the city's needs, other wagons will be purchased. The gasolene patrol wagon is attached to the Twenty-second precinct in West Forty-seventh street, and the electric makes its trips to and from the new Tenderloin station, in West Twentieth street. They are alike in appearance, but differ somewhat from the horse drawn wagons in being larger and in being painted a pea green color. The New York department expects to prove what police departments in many other cities already have learned, that the self-propelled vehicle is far superior to the horse drawn vehicle where quick action is necessary. After "seeing for themselves," it is expected that so far as possible the entire department will be similarly equipped.

Slow Running to Test the Motor.

Probably the best test of the condition of a motor is to run it as slowly as possible, observing whether its action is perfectly even or not. In many cases, to be sure, a motor which runs powerfully and well at normal or high speed, will not "hit evenly" when throttled down, owing either to improper carburation or to uneven ignition. The motor which runs perfectly well at low speed, however, usually retains its action under higher speed and load conditions, provided only it is equipped with a proper carburetter. Incidentally it should be mentioned that a prevalent and most deceptive cause of irregular running at low speeds is lost motion in the linkage between the control levers and the carburetter and timer. Where such slack exists, even a slight amount of vibration is often sufficient to throw out the regulation.

Japan Gives Precedence to Automobiles.

Japan is fast catching up to the eastern world in civilization. In the detail of recognition of the supremacy of the automobile in traffic, the land of Nippon would seem to be a bit ahead of its rival nations; for among the regulations recently issued by the police department of Tokio appears the following: "Automobiles shall have precedence in the street to fire engines, post carriages and military, funeral or the processions of the people."

CINCINNATI PLANS A MOTORDROME

Land Purchased and Half the Necessary Money Pledged—Proposed Site Located Amid Picturesque Landscapes.

Cincinnati may have a motordrome. Land for the project has been purchased and $50,000 of the necessary $100,000 already has been pledged. The men interested in the scheme are Harvey Myers, manager of the Latonia race course; Sid Black, John J. Ryan, ex-Mayor Julius Fleischmann, and other prominent Cincinnatians.

The course will not be built in Ohio, but across the river in Kentucky, adjoining the famous Latonia trotting track. That the Cincinnati project will be carried through seems possible, as the men interested in the venture have not press-agented the scheme at all; rather the opposite policy has prevailed, as the land was bought and all the preliminary arrangements made before any but the few interested persons knew anything about it.

The site for the proposed track is on the Licking river, near the Latonia property, and was purchased by Mayor J. T. Earle from the Latonia Racing Association It comprises 65 acres and the scenery is just the sort to make a popular summer resort, which it is planned to do.

Regarding the track no official details have been made public, but it is stated that it will probably be a mile and one-half course banked to such a degree that will preclude the possibilities of accidents attendant to high speeds on insufficiently banked tracks.

Besides the automobile track it is planned to make a popular resort by putting on all kinds of amusements along the line of the Ludlow Lagoon, a popular place with Cincinnatians. As soon as the damming of the Ohio river is completed the Licking river, which borders the property, will be navigable, and motor boat races upon it will be a possible feature. Naturally a large club house figures in the plans of the promoters.

Automobile racing around Cincinnati has heretofore been confined to the Latonia race track, but the managers do not court it because of the expense of repairing the track before and after each meet. Therefore the horse track people are interested in the new project, to the extent of investing their money in the proposed scheme, and selling the property at a reasonable figure, upon condition that no horse races be held on the new track when it is completed.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

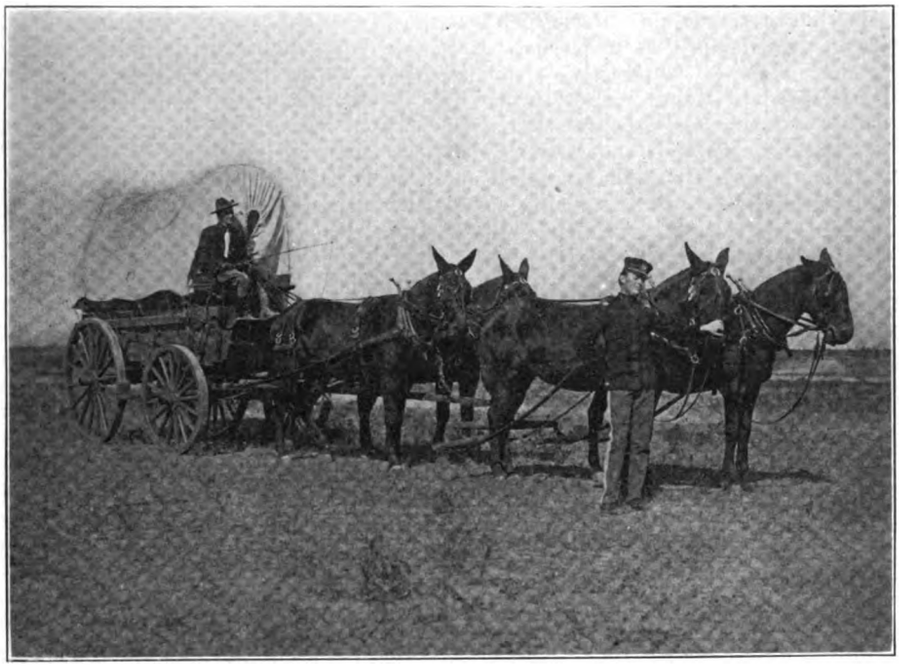
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MOTOR CAR AID IN MAP MAKING

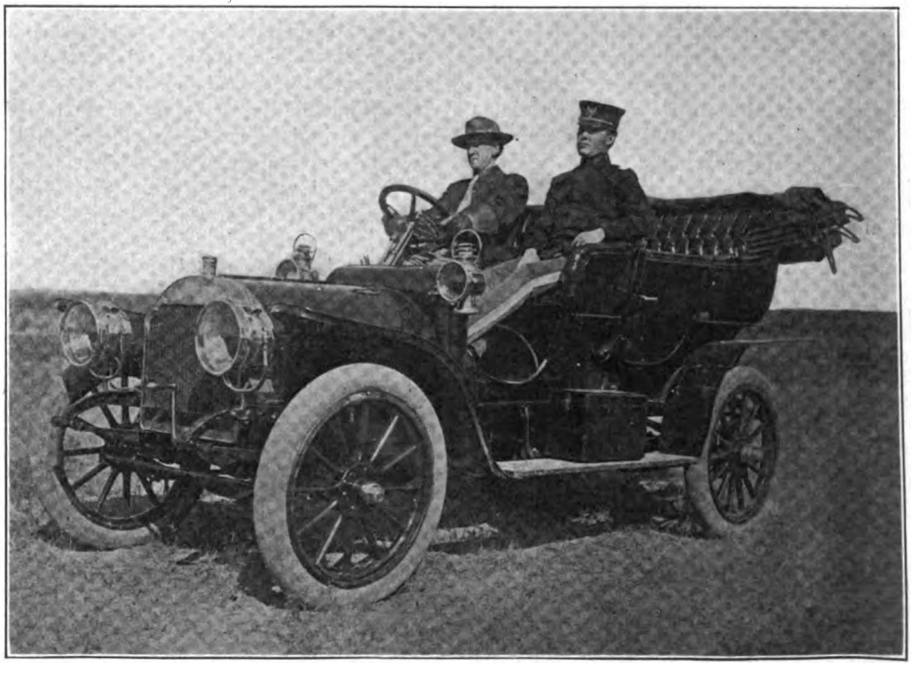
Supersedes the Prairie Schooner and Army Mule in a Topographical Expedition —Lieut. Gimperling's Outfit.

That beloved American military institution, the army mule, which has for so many years been at once the reliance and the despair of those responsible for the army's overland travels, is threatened by the motor car. It is only an entering wedge so far, but is redolent with suggestive prophecy. For the first time in army circles a topographical mapping expedition is to use a motor car instead of a mule team for transportation across the territory under observation. The innovation is due to the enterprise of Lieut. Gimperling, of the Twenty-first U. S. Infantry, and the enthusiasm of H. M. Westcott, his personal friend, who is the owner of the machine. When Lieut. Gimperling had been detailed to make a progressive military map of Southern Arizona, he secured the permission of General Thomas, commander of the Department of the Colorado, to use Westcott's automobile instead of the mule team and prairie schooner outfit usually employed.

As it is, the trip will take several months, although the car, a Stoddard-Dayton, will be able to make as great a mileage in an hour as the mule team could make in a day. Starting from Denver, the party, consisting of Gimperling, Westcott and Arthur Harris, the mechanician, will go to Pueblo and thence along the old Santa Fe trail through New Mexico to Arizona. The ultimate objective point is Fort Huachuca in the south central part of Arizona, and the topographical mapping to be done covers a large part of Southern Arizona. The accompanying pictures illustrate the old and the new way of prosecuting the important sort of task to which Lieut. Gimperling has been assigned. The first shows him standing at the head of his four-mule team. The sturdy animals with the lumbering prairie schooner to which they are harnessed present a quaint and curious contrast to the spick and span automobile wherein the young officer is seated, the owner of the vehicle at the wheel, ready to start upon his journey.



THE OLD WAY: LIEUT. GIMPERLING AND HIS PRAIRIE SCHOONER



THE NEW WAY: LIEUT. GIMPERLING AND HIS STODDARD-DAYTON

RIVAL FOR STEAM ROAD ROLLER

Oil Cooled Gasolene Motor in Machine for Highway Work—Other Novel Features in the Device.

The road roller is a type of vehicle, to which the gasolene motor would appear to be hardly suited because of its extreme light weight in proportion to its power. The use of the steam engine in this capacity has become so well settled, moreover, and the demand for road rollers would appear to be so small, comparatively speaking, that the development of a gasolene machine would seem to be hardly profitable. Nevertheless, a line of these machines is now being built by the Austin-Western Co., Chicago, in sizes ranging from seven to fifteen tons, the entire design being laid out with regard to the novel form of motor employed.

As a matter of fact, in at least one respect these machines have outrun their presumptive evolutionary ancestor, the automobile, in that they are adapted to oil-cooling, no water being carried, and the cooling oil being used over and over in the system. In other respects they are very automobile in construction, having clutches, change speed gears, wheel steering, and single lever speed control. Otherwise they follow the time honored form of the steam roller, both in general outline and in massive detail. Fuel tanks are provided holding sufficient gasolene for an entire day's running, but by using a trailer the supply may be extended almost indefinitely, thus eliminating the necessity for a tender.

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EXPERIMENTAL ROAD TREATMENT

Results of Comparative Methods Conducted in Newton, Mass.—Materials Used and Cost per Yard.

In the search for suitable methods of construction for the American highway, there is a marked tendency to overlook importance of highway maintenance, though happily the mileage of roads once good, now grown into poor condition through neglect or careless handling is yearly diminishing. At the same time it is plain to see that however much the road makers may know of the ideals of laying foundations and building up the bed of the road, the actual working surface both in first state and in renewed condition, remains a continual source of anxiety and question. In a few notable instances, road builders are facing the matter squarely and outlaying considerable amounts in what are acknowledged to be experiments pure and simple.

In this connection the work of Charles W. Ross, street commissioner of Newton, Mass., is a striking example of straightforward effort. The stretch of Commonwealth avenue running out from Boston for a distance of five miles through Newton, has been subjected to a number of comparative treatments to which it is particularly well suited as supporting a variety of traffic. The southerly driveway is used exclusively by automobiles, while the northerly driveway is given over to carriages. An opportunity is thus given not simply for comparing the efficiencies of different methods of treatment on the same road, but also of studying the results under different sorts of usage. Commissioner Ross outlines these tests in a recent article in the Good Roads Magazine.

In 1906 one section of Commonwealth avenue was treated, 3,500 square yards of tarvia being put on," he says. "That was the first experiment we tried, and was on a five per cent. grade. The roadway was swept clean, and the tarvia came to us in tank wagons from Everett. When it got to the road the tarvia was at a temperature of about 170 degrees to 180 degrees. That road went through the winter and came out last spring in fine shape, and to-day is better than it was last year.

"I think that rubber tires have had the effect of rolling it down and keeping it perfectly smooth. There has been no expense this year on this roadway, except, when, in June, a light coat of stone screenings was spread upon it. This was rolled in by the wheels of the automobiles, and that is the only outlay on this road for over a year. The screenings are rolled entirely in now, and the road is as smooth and hard as any asphalt street, and is not slippery in rainy weather. Horses get good footing on it, on account of the large amount of screenings that have been rolled into it.

"Another section of Commonwealth avenue was covered with tarvia this year. The work was commenced as soon as the weather became hot and dry, which was about the first of June. This preparation was applied in the way followed in treating the section previously mentioned, except that it was covered with fine screened gravel instead of screened stone. . . . . During the entire season this preparation has been very satisfactory, as it has been free from dust, seems to work fully as well as the fine screened stone, and could be obtained at a much less expense. We used 28,843 gallons of tarvia and that cost $0.1115 per square yard. These figures are somewhat higher than they otherwise would have been, because we had to haul the tarvia by teams something over twelve miles.

"The section treated in 1906 cost about 14 cents per square yard. A heavier coat of tarvia was put on, which, of course, added to the expense of the work. . . . . You can to-day take a screwdriver and lift up the surface of this roadway to the depth of over an inch. It is like India rubber, and I see no reason why it should not last two or three years without any additional expense.

"A light coating costs less in the first place, but it cannot last as long as a heavy coating. After this work was done we were so well satisfied that we tried experiments on other streets which were subject to heavy traffic. A street in Newton Lower Falls had very heavy teaming over it; tarvia was put on and spread with brooms, at a cost of 19 cents per square yard, but in my opinion it is going to last three to five years. It seems to me that a road which is subject to heavy traffic is much different from a road where there are only light carriages and automobiles. The road just mentioned was first swept, then spiked up with a roller and covered with a coat of one-inch stone. This was rolled down to a smooth surface, and something over one and one-half gallons of tarvia per square yard were applied to the stone. This was covered with screened gravel, as I have described before, and rolled in with a steam road roller.

"Another section of Commonwealth avenue was by contract treated with 'asphaltoilene.' This did not include the sweeping of the roadway and preparing it for asphaltoilene, as that was done by the city. Six cents was the price paid for furnishing and applying the asphaltoilene, which was brought to the city in tank cars and pumped into the sprinkling wagon furnished by the contractor. . . . . In some cases it was necessary to put more on the center of the streets than near the gutters, as the material flowed toward the gutters, and for about two days had to be swept with brooms into the center of the road. After that time it penetrated the roadbed enough to keep its place until the coat of screenings was applied. This could be done with a coating of stone screenings, or of fine screened gravel, which I think I much prefer to stone screenings in such cases. The road was then closed to traffic for about 48 hours. After that it was ready to roll with the steam road roller. . . . . It has been there for over two months, and much resembles the tarvia road, only that it is more elastic and easier for a horse to travel upon.

"Texas oil has been used by the city and has been applied in the following manner: First we applied light Texas or fuel oil by heating the stone screenings on a sand heater, and pouring the oil upon the screenings, putting on from about 25 to 30 gallons of oil per cubic yard of stone. This mixture was turned over by shovels and piled up. It was allowed to remain about 12 hours in a large heap, then was shoveled into the teams, spread with shovels upon the surface of the road, and immediately rolled down with a steam roller.

This work was satisfactory, and in my opinion is a good way to apply oil to the surface of a street. On other streets we tried a heavier Texas oil which had more of an asphalt base. This was spread upon the street by a watering cart with perforated tubes in the rear, the flow through which could be regulated by valves to give the desired amount per square yard. This was allowed to remain on the surface of the street from ten to twelve hours, and then covered with a light coating of screened gravel. The expense for labor was much less in this case than in the former, and the material used cost 2½ cents per square yard. The quantity of oil used was a little less than one-half gallon per square yard, and one-half the roadway was treated at a time, allowing the other half to be used by teams, which were kept off the treated part for three or four days, until the oil had plenty of time to penetrate into the roadbed. After this there was no spattering, nor was it otherwise disagreeable to traffic.

"Another section of Commonwealth avenue was treated with a mixture of Portland cement. The surface of the roadway had been thrown off by the automobiles, was worn down to the No. 2 stone, and its center, which should have been higher, was two or three inches lower than its sides. That material was screened out and put back into the surface of the road. Then we mixed a very thin grout of four parts sand with one part cement, spread it on with large coal shovels, and swept it in with brooms. That mixture soaked down, grouted the stone together, flush up on the surface, and made it perfectly smooth. The grout was put on about the 10th of June, and has given very good satisfaction. The cost per square yard of this work in detail was as follows: Cement, 3.36 cents; sand, 0.38 cents; labor, 2.03 cents; teaming, 1.56 cents, making a total cost of 7.33 cents per square yard."

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WOMEN CABBIES QUIT IN DISGUST

Frau von Papp of Berlin Found the Occupation too Strenuous—Rude Men Discouraged Mme. Lutgen of Paris.

Berlin's chauffeuse is no more! Frau von Papp, the only woman licensed as a public automobile driver in the German capital has not shuffled off the mortal coil, but she has given up in disgust the career of cab driver according to cable advices from abroad. Thus ends an innovation which aroused much interest as to the outcome, particularly in this country, where every item bearing on the sex equality question is seized with avidity by those women who would cope with men on an equality upon the field of hard labor not intended for those of the gentler and less physically able sex.

Frau von Papp has now come to the conclusion that driving an automobile cab is a work not designed for women. She says she did not possess sufficient endurance to withstand the arduous duties of the calling. Being out at all hours and the necessity of facing all kinds of weather did not agree with her, in addition to which, the baroness chauffeuse declares, the occupation of public driver is one which must eventually prove distasteful to women of finer instincts, wherever attempted, something that Mere Man thought when Progressive Woman decided to invade his field of labor. Therefore Mere Man will smile a broad smile when the baroness's conclusions become generally known.

The experiment with women cabbies in Berlin has been similar in Paris, states the dispatch. Madame Lutgen, formerly Countess du Pin de la Bueniere, has decided to give up being a taxicab driver and will attempt to secure a position as coachwoman in a private family. Madame Lutgen divided honors with Madame Dufaut in the new occupation. It was a matter of great surprise when the former countess decided to quit as it was believed she was in the business to stay. Madame Lutgen's reasons for giving up the work are much the same as Frau von Papp's. She complains of having been grossly insulted by what she declares were "dignified looking men."

"Although I received occasional tips of larger demonination than usually given to other cabbies," Madame Lutgen is accredited as saying, "still there have been days when after being out in the rain and cold all day, I have taken but one fare. Some men, too, took advantage of the fact that they had a woman cabby to give free rein to language of a most shocking sort. I do not believe being a cabby is the proper sort of occupation for women."

"Women in this business are a nuisance," a manager of a large Berlin concern that keeps automobile cabs for hire, is said to have declared. "There is no doubt that the experiment in Berlin is dead. I shall certainly engage no more women. They do not know how to take care of their cabs and they do not earn as much as the men. Women chauffeurs always expect the men to do all the work at the garage and to wait on them, which the men are unwilling to do, nor is there any reason why they should do so. Women are not cut out for automobile cab drivers."

State Association for West Virginia.

If the efforts on the part of the Ohio Valley Automobile Club, of Wheeling, meet with the success they merit, West Virginia will have a State automobile association. At the last meeting of the Wheeling organization a resolution was passed with this object in view. A convention, the date of which cannot be determined until the various clubs have been heard from, has been called to meet in Parkersburg, some time during February, when the State association will be organized. At its meeting the Ohio Valley Automobile Club voted to purchase signs to mark the highways in the county most frequented by automobilists. The county commissioners have agreed to stand half the expense. The club will purchase the signboards and the county officials will see that they are put up.

Chauffeurs Organize a State Association.

Illinois chauffeurs have decided to take hold of the chauffeur question themselves and settle it to everybody's satisfaction. The Illinois Chauffeur Association has therefore been formed to "raise the moral, intellectual and social tone of chauffeurs in the State; to assist owners to get good, efficient drivers for their cars and to exercise a guardianship over members calculated to keep them up to a high standard." The officers of the association are: President, F. M. Johns; first vice-president, A. Sanderson; second vice-president, D. F. Farrar; treasurer, G. F. Chapin; secretary, H. W. Powers; corresponding secretary, E. Wallace; board of managers, F. W. Kickbush, Thomas T. North and William O'Hara.

Inter-State Organization in Brooklyn.

Another "helping hand" automobile association has been formed, Brooklyn being the offender this time. It is called the Inter-State Motorist Association, and has been incorporated under New York laws The association, which will provide "legal aid" to persons arrested for breaking the speed laws and will toy with legislation, is to be located at 177 Montague street.

Batchelder Heads Worcester Club.

The governors of the Worcester Automobile Club, of Worcester, Mass., met last week and elected a president and a vice-president. George W. Batchelder will occupy the chair and Charles M. Booth will assist him.

WITT WAS NOT QUICK WITTED

Might Have Escaped with Light Penalty for Larceny of a Lamp—Now Charged with Stealing an Automobile.

It would have been far better—better for himself—had F. A. Witt in the pursuit of his psychologic studies acquainted himself with Professor Munsterberg's treatises on human emotions and the control thereof; for if he had done so, doubtless he would not now be languishing in jail, charged with stealing an automobile. When Witt was arraigned in Judge Chambers's court in Los Angeles, Cal., one day recently, and asked to plead to a charge of having stolen an automobile lamp, profound astonishment was pictured on the young man's face. In a dazed voice Witt pleaded not guilty and thereby almost railroaded himself to the penitentiary. For be it known, Witt did not steal the lamp; he stole the automobile.

The car belonged to George Hart, a hotel proprietor, and was stolen by Howard Francis, J. K. Harrington and Witt. The last named was the chauffeur who drove it away. Francis was arrested shortly afterwards at Bakersfield; Harrington fell a victim to the detectives at Sacramento and Witt was "pinched" in Los Angeles last week. Harrington and Francis confessed, and on account of their previous good records escaped the penitentiary and are now doing time in the city jail. Through some error Witt was charged in the complaint with having stolen merely a lamp, and when the charge was read he was so dumbfounded that he pleaded not guilty, when an admission would probably have gotten him off with a fine. But Witt could not control his emotions and so was bound over for trial. In the meantime the charge in the complaint was changed.

Got Even for Affront to His Bull.

"Farmer John" Graham, of Upper Graham, Pa., got "square" one day last week for the bump given his big bull by a touring car along the Manatawna road last September. The bull was the challenger and was a month recovering from the shock. Another automobile of the same color, or perhaps it was the same one, opines Graham, got stalled on Manatawna hill Wednesday afternoon. Graham was at work in a field nearby. The two men and finally the two women in the car pleaded with Graham to hitch his team to the axle and pull it up the hill.

"I will for $25," said Graham, thinking of the occurrence last summer, and planning to get even.

After much haggling, during which he described the bump the last red automobile gave his bull, the farmer compromised on $15, paid in advance.

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The Week's Patents.

868,210. Cushion Tire. William D. McNaull, Toledo, Ohio. Filed Sept. 1, 1906. Serial No. 333,012.

1. In a wheel, the combination of an inner rim, an outer rim, a strip of flexible material between the rims, secured to the inner and outer rims at alternate points, blocks on the inner rim against which the strip rests, bolts passing through the strip and engaging sockets in the blocks on the outer rim, and pins passing through the blocks and holding the studs in position.

868,251. Carburetter. Leon Bollee, Le Mans, France. Filed April 4, 1904. Serial No. 201,549.

1. A carburetter comprising a variable sized mixing chamber constituted by two movable walls therein, a fuel outlet pipe extending into said variable sized chamber, and means for simultaneously and proportionately regulating the size of the mixing chamber and the opening of the fuel outlet, substantially as set forth.

868,265. Carburetter for Internal Combustion Engines. Edward V. Hartford, New York, N. Y. Filed Aug. 25, 1905. Serial No. 275,738.

1. A carburetter having a valve and automatic and frictional means for regulating the action of the valve.

2. A carburetter having an automatically acting valve and frictional means for retarding the action of the valve.

868,293. Acetylene Gas Generator. Edwin M. Rosenbluth, Philadelphia, Pa. Filed March 9, 1907. Serial No. 361,562.

1. In an acetylene gas generator, the combination with a valve casing having a port and forming a trunnion for said generator; of a plug in said casing having a port complementary to the port in said casing; and means arranged to maintain said plug stationary in said casing, substantially as set forth.

868,319. Reversible Automobile Fender. Luther P. Barrett, St. Louis, Mo. Filed March 4, 1907. Serial No. 360,509.

1. An automobile fender having the shape of a double cone and rotatably mounted upon suitable bearings.

2. An automobile fender consisting of an upwardly and rearwardly inclined axle, and a double cone of spring metal hoops rotatably mounted up said axle.

868,337. Combined Steering and Braking Device for Motor Cars. Ernst H. Geist, Cologne, Germany. Filed Feb. 26, 1907. Serial No. 359,438.

1. In combined steering and braking devices for motor cars, wheels, each being revolubly secured in individual frames connected to the chassis by vertical pivots, means to turn the wheels with their frames at will in parallel positions at an angle to the line of motion of the car and into convergent positions substantially as described.

868,404. Spark Plug for Explosive Engines. Francis W. Brady, Englewood, N. J. Filed May 11, 1906. Serial No. 316,322.

1. A spark plug for explosive engines, provided with a stationary electrode, the stem of the stationary electrode being supported in insulating bearings and being surrounded intermediate of said bearings with an air insulation space communicating with draining passages; substantially as described.

868,405. Wheel. George F. Brandenburgh, Irvington, N. J. Filed April 6, 1906. Serial No. 310,248.

1. In a wheel, the combination of a hub having a closed annular chamber, hollow spokes opening at their inner ends into said chamber, hollow felly sections independent of one another and each providing at its inner side a slideway adapted to receive the end of a spoke as a plunger, and a tire around said felly sections.

868,585. Force Feed Lubricator. Albert A. Stelting, Madison, Wis., assignor to The Madison Kipp Lubricator Company, Madison, Wis., a Corporation. Filed Sept. 26, 1905. Serial No. 280,148.

1. The combination with a rotary driving shaft and a plunger adapted to be reciprocated thereby, of an eccentric mechanism mounted on said driving shaft and comprising independent elements mounted on said shaft and eccentrically thereto and adapted to be adjusted relatively to each other to vary the eccentricity of said eccentric mechanism relatively to the axis of said driving shaft, and power transmitting devices interposed between said eccentric mechanism and the said plunger.

868,611. Vehicle Wheel. Winfield J. Mitchell, Pittsfield, N. H., and James R. Mitchell, Templeton, Mass., assignors to Mitchell Punctureless Pneumatic Tire Company, Swampscott, Mass., a Corporation of Massachusetts. Filed Nov. 14, 1906. Serial No. 343,446.

1. A vehicle wheel comprising a chambered rigid body having an inner seat, a pneumatic cushion bearing thereon, two outer seats, an annular spacing member formed independently of the outer seats, and rigidly attached thereto, said spacing member having leg-receiving openings between the outer seats, an elastic tire U shaped in cross section, and having base portions permanently bearing on the outer seats, and leg sections bearing on the pneumatic cushion and on the elastic tire, and movable in said openings.

868,673. Automobile Transmission Gearing. John W. Lambert, Anderson, Ind. Filed March 27, 1905. Serial No. 252,332.

1. A gearing of the type set forth, comprising a driving disc, a driven disc adapted to be brought into frictional engagement with the driving disc, a driven shaft carrying the driven disc, means for shifting the driven disc on its shaft, a supplemental two-speed reducing gearing mounted wholly on said driven shaft and embodying a sprocket wheel loosely supported on said shaft, a train of gears permanently in mesh, one of said gears being connected to the sprocket wheel and one being rigidly secured to the driven shaft, means for locking the sprocket wheel and attached gear against independent rotation to drive the sprocket wheel directly at the same speed as the driven shaft, and means for locking some of said gears against rotation around the driven shaft, whereby the sprocket will be driven through the train of gears and at a lower speed than the driven shaft.

868,689. Explosive Engine. Harry M. Neer, Columbus, Ohio, assignor to The Neer Air Cooled Engine Company, Plain City, Ohio, a Corporation of Ohio. Filed Nov. 7, 1906. Serial No. 342,334.

1. The combination with an explosive engine, of a fan shaft, connections between said engine and said fan shaft, a fan mounted upon the fan shaft, and a yielding connection between said fan and the shaft upon which it is mounted.

868,693. Device to Prevent Tampering with or Theft of Motor Vehicles. Leon Ottinger, New York, N. Y. Filed Dec. 18, 1905. Serial No. 292,247.

1. An anti-theft device for motor vehicles, comprising a latch mechanism for the bonnet or hood, an electric switch for the motor circuit, and a lock for controlling both said switch and said latch mechanism.

868,707. Carburetter. Walter C. Schneider, Detroit, Mich. Filed Feb. 25, 1907. Serial No. 359,232.

1. A carburetter comprising a carburetting chamber, a channeled hub within said chamber, a feed inlet passage opening leading into the channel of the hub, a manually

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operated valve to control said channel, and a rotatable fan supported upon said hub below the valve.

868,728. Automobile Vehicle. Jules M. M. Truffault, Paris, France, assignor to Societe des Automobiles Truffault, Paris, France. Filed April 29, 1907. Serial No. 370,857.

1. An automobile vehicle comprising in combination two small grooved pulleys keyed on the driven shaft, two large grooved pulleys solid with the driving wheels and independent of one another, two belts connecting each a small pulley to the large pulley situated on the same side, lateral sliding members connected by one of their ends to the rear train which carries the two large pulleys solid with the wheels, lateral rods pivoted on a fixed part of the chassis and inclosed in the lateral members, operating rods connected by one end to the lateral members, an operating lever connected to the operating rods, a vertical ball and socket suspension situated between the chassis and the rear train, and a friction abutment inserted at each side between the chassis and the rear suspension, subtantially as described and for the purpose set forth.

868,732. Press for Vulcanizing Pneumatic Tires. Amedee E. Vincent, Noisy-le-Sec, France. Filed June 12, 1907. Serial No. 378,563.

1. A press for vulcanizing pneumatic tires comprising, an upper half-shell securely fixed in position, a lower half-shell, the main cylinder of the press and its piston, a movable platen borne by the piston of the cylinder to which the lower half-shell is secured, a core on which the pneumatic tire to be vulcanized is applied, hydraulic jacks whose cylinders are securely fixed in position and which bear the core, springs which join the movable platen of the hydraulic press with the core, substantially as described and for the purpose set forth.

868,752. Variable Reactive Coil. Ralph E. Barker, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Jan. 23, 1907. Serial No. 353,627.

1. A variable reactive coil comprising a core forming a closed magnetic circuit of varying cross section and a winding on said core, the core and winding being relatively adjustable.

868,757. Oil Regulating Valve. George S. Bennett, San Francisco, Cal. Filed Oct. 1, 1906. Serial No. 336,834.

1. In a regulating valve, the combination of a valve body having a seat therein, a valve stem having a seat at its end and means to regulate the flow of fluid when the valve is full open at the valve seat,, and a flange on the valve body above the valve seat within which the valve stem slides, substantially as described.

868,765. Internal Combustion Engine. Herman Dock, Wyncote, Pa., assignor to The Dock Gas Engine Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 19, 1906. Serial No. 343,949.

1. In an internal combustion engine an exhaust valve controlling means including a cam shaft a main cam, an oppositely arranged secondary cam carried thereby and in alignment therewith and means for projecting and retracting said cam to move in into or out of an operative position, said means including a longitudinally movable inner shaft passing through said secondary cam.

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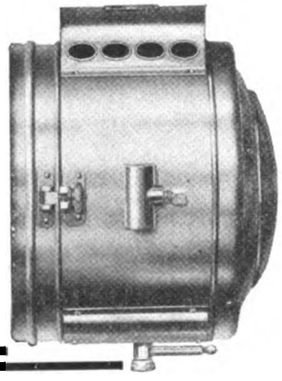
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Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also — and the jobber cut the price.

Then there was fun in the camp. That hurt us — it hurt the dealer, too.

Then, in his haste to close a sale, the jobber would let wrong gear ratios go out — that hurt the consumer, the dealer and ourselves. For the jobber knows no law.



So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

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We guarantee this jack for 12 months, and at the price, it is the best value ever offered to the automobile trade.

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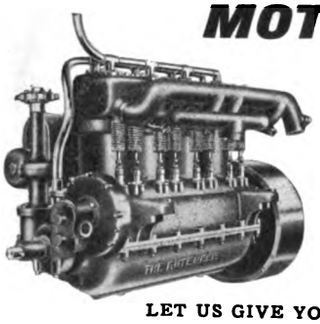
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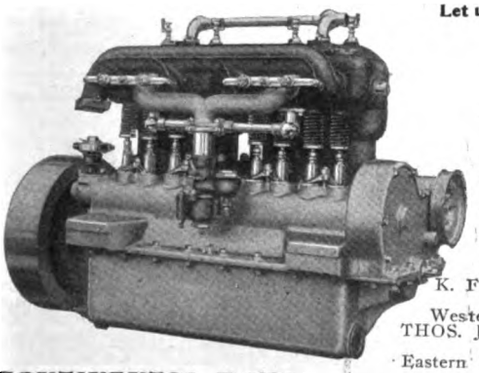
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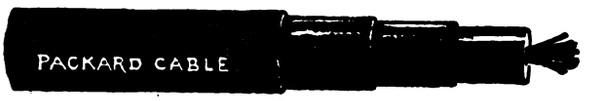
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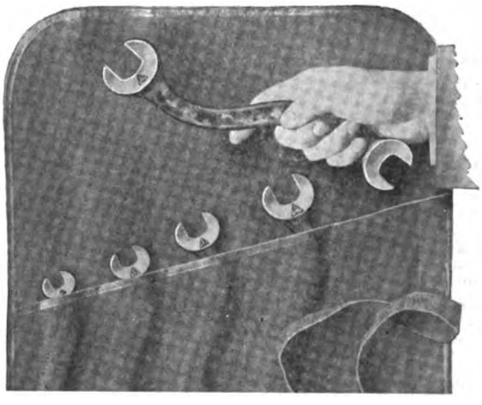
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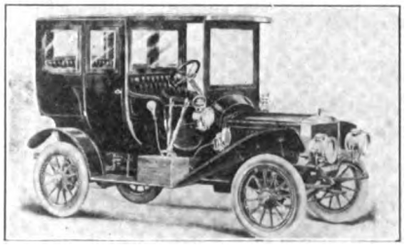
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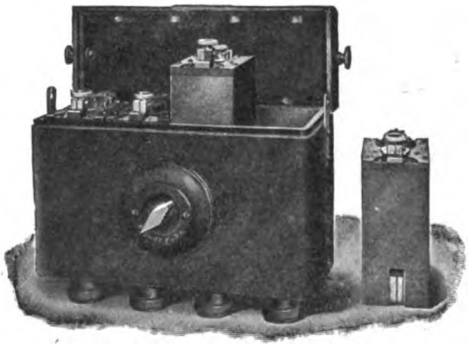


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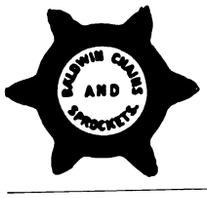
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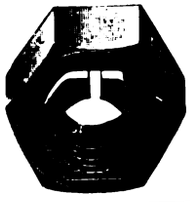
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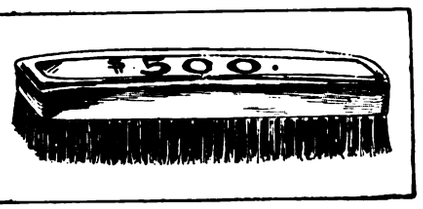
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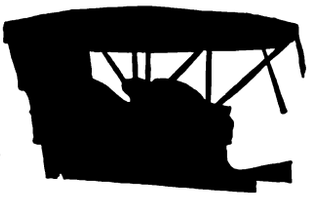
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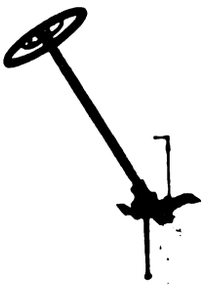
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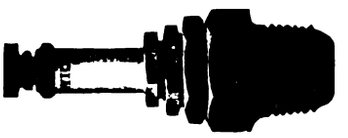
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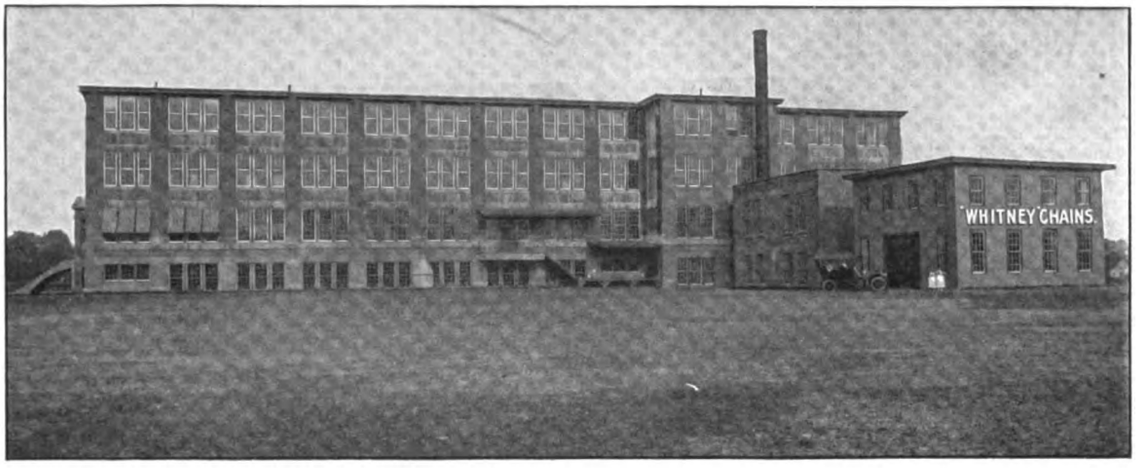
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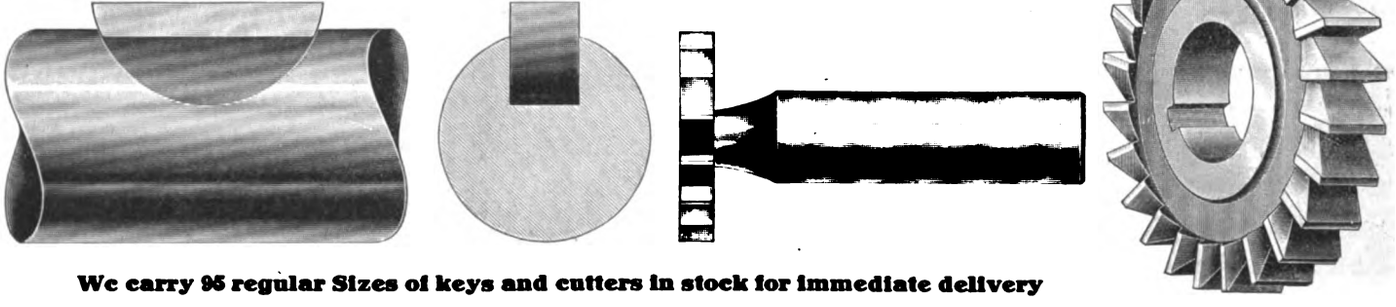
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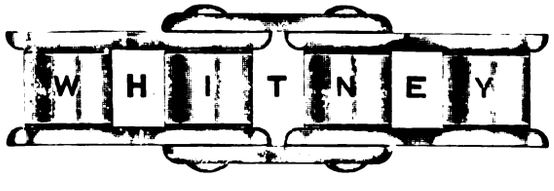
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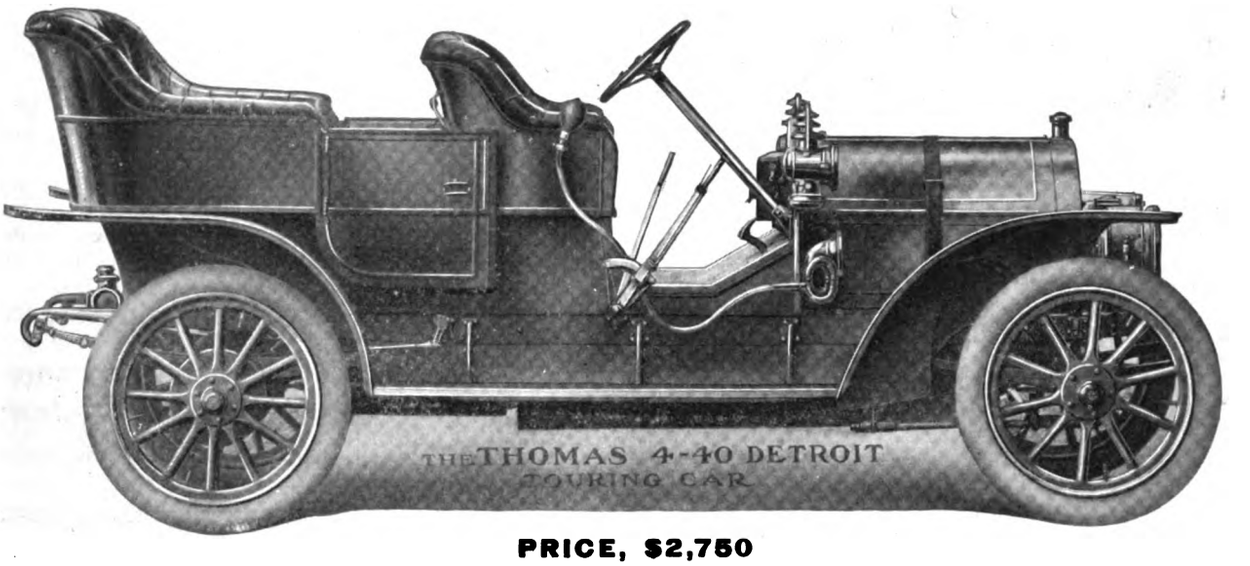


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Just say, "Show Me."

He'll come around with a car and show you a "silent argument" that will get your order or he will retire without a word.

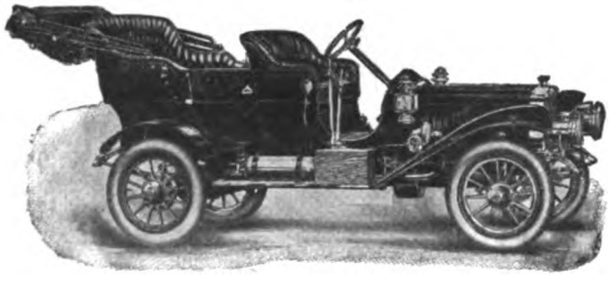
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One Price for Warner Auto-Meters



NEVER, until this year of 1908, has there been a speed indicator sold at one absolutely fixed list price. Manufacturers have "named" a list price and some even required the dealers to sell at "that" price.

Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also—and the jobber cut the price.

Then there was fun in the camp. That hurt us—it hurt the dealer, too.

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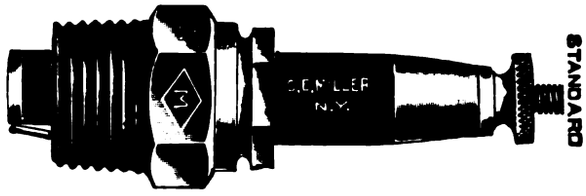
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This plug has been on the market for the past four years and there are thousands of them in use. It is considered one of the best on the market, and is guaranteed for 90 days. Price of Standard size, $1.50 each. We can furnish special size to fit any car on the market.

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The first cost of TIMKEN equipment for Commercial Vehicles is out of all proportion to the resultant saving in up keep and increased earning power through added carrying capacity.



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illustrated above is especially designed for vehicles doing heavy duty. This Axle is fitted with TIMKEN ROLLER BEARINGS in the knuckle head, making steering, even under the full load carrying capacity easy and simple—is forged out of heat treated steel and equipped with TIMKEN ROLLER BEARINGS in the hubs.

TIMKEN ROLLER BEARINGS are especially designed to carry as much end thrust as radial load—both principle and construction providing for an evenness of wear that does not impair or destroy in any manner the characteristics of the bearings. This is the TIMKEN principle distinctive and individual—and cannot be found in any other type or form of anti-friction bearings and that is the reason WHY the Successful Commercial Vehicle Builders use

Timken Roller Bearing Axles

Facts and figures on reduced cost, operating and maintenance for the asking.

The Timken Roller Bearing Axle Company, - - - Canton, Ohio

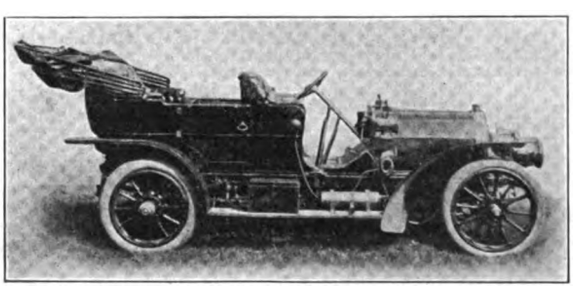
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Type "C" "50"



$2800 **With Magneto, $3000**

Touring Car, Roadster, Touring Roadster, Limousine.
Valve-in-head Motor, Chrome Nickel Steel, Annular Bearings.

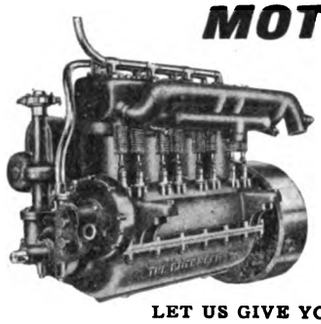
Pennsylvania Auto Motor Co., Bryn Mawr, Pa.

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Los Angeles, Cal.—Greer-Robbins Company, 1501-1505 South Main St.
San Francisco, Cal.—City Hall Automobile Company, 66 Fulton St.
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Chicago, Ill.—B. C. Hamilton, 1218-1220 Michigan Ave.
Providence, R. I.—Pennsylvania Motor Car Agency, 133 Washington St.
Denver, Col.—Denver Omnibus & Cab Company.
Kansas City, Mo.—Auto-Motor Company, 1122-1124 East 15th St.
Pittsburg, Pa.—Bellefield Motor Company, 4514-16-18 Henry St.
Brooklyn, N. Y.—Charles F. Batt, 1378 Bedford Ave.
New York City—Archer & Company, 1597 Broadway.
Spokane, Wash.—Dulmage-Rose Automobile Company, 1212 Second Ave.
Philadelphia, Pa.—West-Stillman Motor Car Company, 153 No. Broad St.
Baltimore, Md.—Rice's Garage, North & Madison Aves.
St. Louis, Mo.—Lakedel Automobile Company, 5143 Delmar Boulevard.
Buffalo, N. Y.—Brunn's Carriage Manufactory, 1140 Main St.

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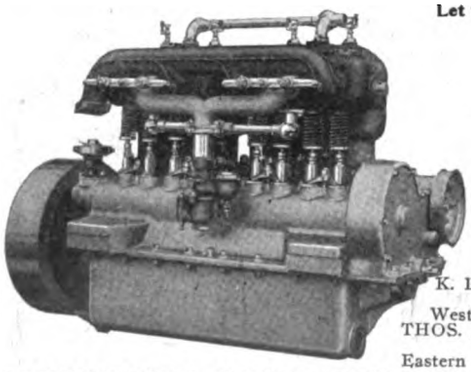
THE KINSEY MFG. CO., Dayton, Ohio.

Triumph Grease, What Is It?

¶It is the newest production of auto grease, and benefitting by the experience of other makers, we have produced the best one yet. ¶We do not imitate any one, nor follow any other maker's plans. Our grease is spongy when made—it is spongy all the time, but it does not melt or run out. ¶It never gets hard or stiff so that it will not do its work properly—no matter how cold the weather is. It is made of the purest and best lubricants to be found, and compounded in such a manner as to produce what the auto user has long wanted. ¶A grease that will lubricate from start to finish, and will last long enough to pay for the trouble of putting it in the machine, and then staying right there like a good clerk attending to its own business constantly, and does not need punching up and renewing every few days, and leaves the machine clean and not all grease when through using it. ¶It is the red thorn in the side of the old fogy grease, or the non-fluid oil makers. It is always RED. No other grease like it, and it is not like any other grease. So we are not imitators in any sense of the word. ¶Buy it, and try it, and if not all we claim for it, any dealer will refund all expense it has been to you.

The Perfection Grease Company, South Bend, Ind.

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Let us quote you on 4-cylinder motors for 1908

THREE SIZES

4¼ in. x 4½ in.
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4-cylinder with self-contained oiling system.

Motors are ready for coupling any standard magneto.

Our new factory and machinery enable us to guarantee quality and deliveries. Also clutches and transmissions. Send for catalogue.

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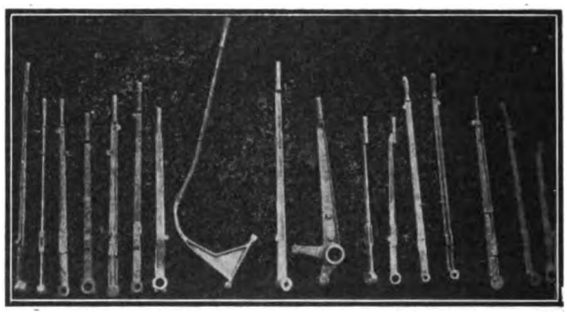


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Our new **MULTIPLE LOW TENSION CABLE** is a new feature. It greatly improves the wiring of any multi-cylinder engine. Samples and prices on request.

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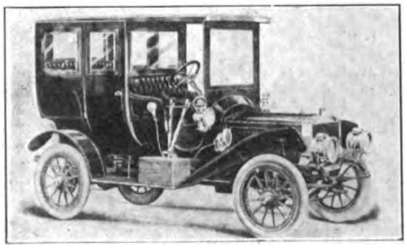
PARSONS' MANGANESE BRONZE LEVER CASTINGS



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THE WILLIAM CRAMP & SONS SHIP & ENGINE BUILDING COMPANY, - Philadelphia, Penna.

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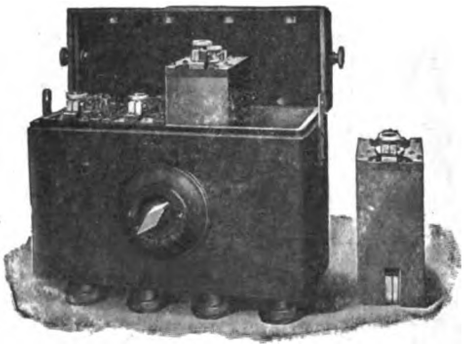


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Large Contracts for entire outputs. Specially equipped for Limousine and all other high-class enclosed work.

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RACINE NOVELTY MFG. COMPANY, Racine, Wis.



HEINZE COILS

Send for 1907 Catalog and Prices.

HEINZE ELECTRIC CO., Lowell, Mass.

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as to excessive maintenance cost. And they probably would kick if they had occasion. Of course a few of them do, but the percentage is about equal to the percentage of motorists who are willing to swap their cars for horses.

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The First in the Market
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THE HARROUN BUMPER PATENT has been allowed, and as soon as it can be issued we will bring suit against all USERS of Bumpers infringing on and not manufactured under the HARROUN license.

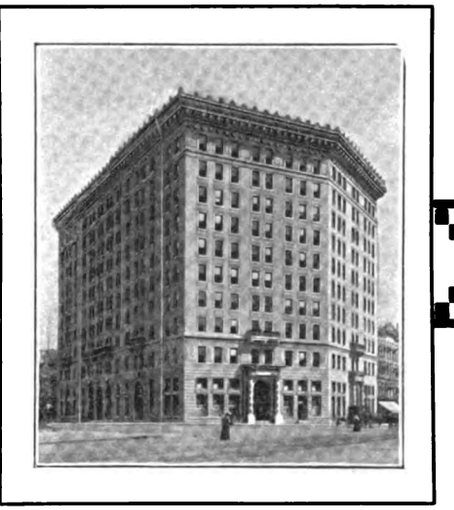
R. W. HARROUN, Patentee.

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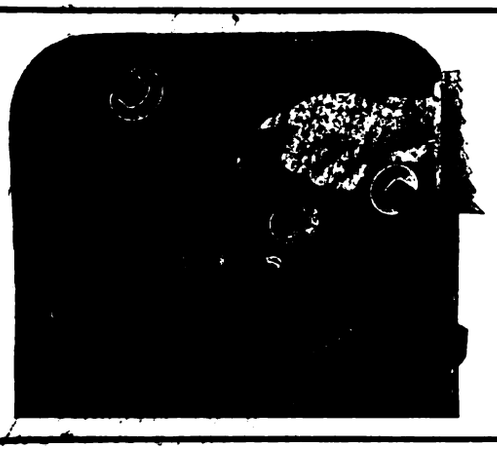
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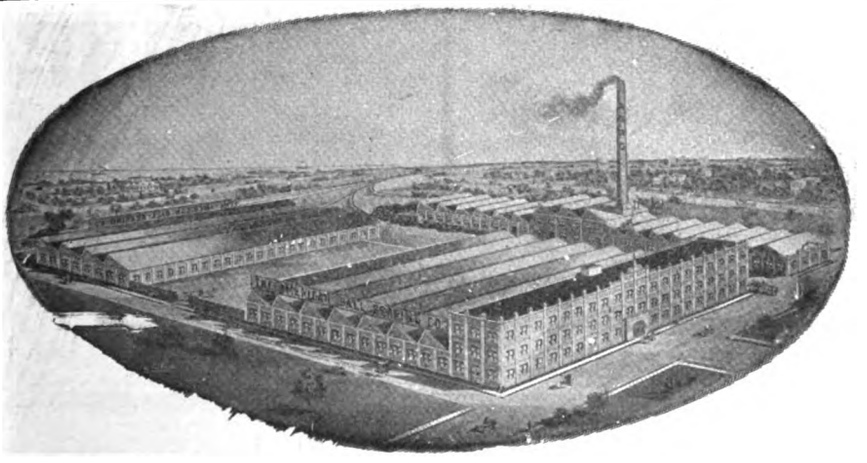
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Handiest Auto Wrenches

A Set of 5 B. & S. General Service Wrenches (10 openings) put up in a handy KIT BAG
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The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

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is more than a mere phrase, it is a title earned through correct design and careful construction and proven by years of hard, constant service wherever power-driven vehicles are known.

The practical qualities that established the Rambler reputation are,—

1st—APPLIED POWER. By this we mean actual tractive force as applied to the road wheels. Owing to the straight line drive of the four-cylinder models and the direct chain drive in the two-cylinder cars, Ramblers have greater propelling force per pound than any other car on the market.

2d—DEPENDABILITY. Ramblers are built to stand the test of hard, daily service over the worst of American roads. This condition is not reached by mere weight and masses of metal, but by simple, scientific construction in which each element is stronger than the strains upon it can ever require.

3d—PRACTICAL ROAD VALUE. With the vast facilities of an enormous plant like the Rambler factory, skillfully directed to the production of two models only, greater value per dollar can be offered than is possible in a plant of lesser output.

In short, the Rambler is a car of

Power, Service and Value

Ordinary business policy dictates a careful examination of its many high qualities before ordering your new car.

Our 1908 catalog fully describing two touring cars and a high-powered roadster is at your service: write to-day.

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Main Office and Factory, Kenosha, Wis.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, January 23, 1908. No. 17

RECEIVERS FOR E. V. CONFIRMED

Connecticut Court Makes Appointment of Barrett and Nuckols Permanent—Allowances Granted.

In the Superior court at Hartford on Monday last, Judge Shumway made permanent the appointments of Halsey M. Barrett and Henry W. Nuckols as receivers of the Electric Vehicle Co., and allowed them $600 each for their services during the six weeks, December 10 to January 21. In doing so, Judge Shumway asked if the receivers expected to make claim for compensation in the other jurisdictions where they have been appointed receivers. Mr. Nuckols said he had not thought so. M. Toscan Bennett, lawyer for the receivers, said that he did not want to have it understood that the $100 a week, which the receivers asked for, could be taken as a precedent for their future compensation. John R. Hills and F. C. Billings, who appraised the property of the company, were each allowed $1,000 for the service.

Judge Shumway also made an order that all claims of creditors be presented to the receivers within four months from January 17, 1908.

Search for Missing Grout Assets.

The receivers of the Grout Bros. Automobile Co., Orange, Mass., are endeavoring to clear up the alleged disappearance of certain assets of the firm, and for that purpose Karl Grout was examined in court last week as to the reported mutilation of a ledger, and the alleged sale of an automobile at just about the time the concern went into the receivers' hands. He produced several pages from a ledger and book of accounts due, and testified to the sale of the automobile in question to a Boston man for $1,000, half of which was received by him and the rest by Charles Grout, who is supposed to be in Seattle, Wash., at the present time. There was also inquiry as to supplies said to have been taken from the factory and placed in a barn. The hearing was continued.

Knox Ready for Creditors' Officers.

A. N. Mayo, trustee of the Knox Automobile Co., Springfield, Mass., has called a meeting of the preferred stockholders for Tuesday, 28th inst., at which time officers of the reorganized company will be elected. Mr. Mayo reports that the resignations of all the present officials are in his hands. Under the terms of reorganizations, the capital stock of the company was increased from $500,000 to $1,000,000, and all of the creditors now are in possession of the preferred stock, accepted in payment of their claims, which gives them the voting power. They will elect the clerk, the treasurer and six of the nine directors at next Tuesday's meeting.

Frenches Offer to Withdraw Claim.

A meeting of the creditors of the St. Louis Motor Car Co., Peoria, Ill., has been called for January 28, to consider a proposition to be laid down by Jesse French, Sr., and his wife, Callie L. French. Mr. and Mrs. French have offered to withdraw their claim of $61,287.21 if they are allowed to have a certain touring car which was in the factory at the time the company was thrown into bankruptcy, and also if the balance they owe on unpaid stock subscriptions is struck off. J. M. Sholl, the trustee, believes that it would be for the benefit of all the creditors to accept the French proposal.

Diezeman Liabilities and Assets.

Schedules in bankruptcy of the Diezeman Shock Absorber Co., New York, which failed several weeks since, show liabilities of $41,913, and assets of $4,826, consisting of machinery, etc., at the plant in Hoboken, $3,250; accounts, $1,504; notes, $22; money deposit, $50. The largest creditors are Samuel Fisher, $22,402, and Carl Bomeisler, $11,987.

BOOMING A NEW WONDER-WORKER

Company Demonstrating Remarkable Capabilities of a Primary Battery—Its Novelty and Construction.

A primary battery suited to all purposes to which the accumulator or storage battery now is applied, yet weighing only half as much and costing in maintenance even less than commonly is charged by city electric light companies for the use of current alone, is the alluring offering presented by the Decker Electrical Manufacturing Co., of Philadelphia, which has come to New York for the purpose of exploiting the wonders of its product. The Decker battery is the invention of Frank A. Decker, also a Philadelphian, who, on the recommendation of the Franklin Institute, has been awarded the John Scott Legacy medal and premium for "the most deserving invention." The Decker company has offices at 371 Bullitt Building, Philadelphia, but at present is demonstrating the performance of the battery in a suite of rooms in the Mills Building, 15 Broad street, New York City.

While still practically unknown to the public, the Decker battery is not strictly new, since it first came to the attention of the scientific world a little over a year ago, when it received extremely flattering notice from a number of eminent authorities. It was then stated that the inventor had been working on the idea for several years. Since then, it is said, extensive tests have been made, an automobile equipped with the battery having been in use for a year or so, and various other special trials carried out with complete success. In the case of the car, it is claimed that the mileage obtainable with the new battery was just about double that which was developed by the original storage battery which it replaced.

Generically, the Decker battery is the or-

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dinary two-fluid primary cell using graphite and zinc plates, but of improved mechanical construction in several respects. The essential feature upon which its novelty rests is in the method of renewing the "charge" by replacing the electrolyte and depolarizing solutions with fresh material as fast as they became depleted. To this end a two-compartment tank is used in conjunction with the battery, and the fluids are raised into the cell by pneumatic pressure when the current service is required. When the current falls off owing to depletion of the electrolyte, the cells are drained, the fluids being allowed to mingle with the supply in the tank, and afterward the renewed solution is pumped back into the cells which are then practically as good as new. The tanks ordinarily supplied contain sufficient liquid for three charges of the battery. The tension of a single cell is 2.2 volts on open circuit, and 1.7 volts on closed circuit. The cells may be confined in any way desired.

The original spply of chemical energy for the battery thus comes from the fluid, which is a solution of sulphuric acid and sodium bichromate. The charging process, therefore, which is analagous to the "charge" of the ordinary accumulator consists in renewing the supply of liquid. In addition to this the zinc plates must be renewed from time to time—usually after 3 to 8 charges of fluid have been exhausted, depending on the rate of discharge.

The scheme of the Decker Co. includes not simply the manufacture and sale of the battery, but also the purification of the electrolyte, from which the zinc salts are electrically deposited and the fluid prepared to be used over and over. The plan is to allow customers a rebate on used solutions, furnishing the fresh supply in tanks ready to install in the plant. The zinc plates are rolled and afterward amalgamated by a special process which tends to prevent gassifying in action.

As applied to automobile use, a special form of tank is used mounted in the front of the car and so arranged that it may be tilted downward, thus lowering it sufficiently so that the fluid will drain by gravity from the battery in the rear of the vehicle. When the tank is in its normal position, the fluid runs into the battery by gravity also, so that no pump is required to effect the charging. A two-way ball check prevents the electrolyte from surging back and forth when the car is on grades. The automobile type of battery is made up of 3-cup cells, that is to say, of a group of cells each having 3 zinc and 6 graphite plates, and weighs in all some 300 pounds. With the entire amount of fluid contained in the supply tank it is capable of 500 miles of average service. The total cost including maintenance and charging is much less than that of the storage battery, the first cost being about the same at present.

The assertion is made that by the use of the battery, current may be obtained at a guaranteed cost of not more than 15 cents a kilowatt hour, as against the usual charge of 25 to 30 cents, for current alone by the average city lighting company. A very liberal demonstration of the possibilities of electricity as supplied by a primary battery is afforded at the local office where a multiplicity of dazzling lights, various appliances, such as a sewing machine, dental engine, X-ray machine and an electric forge, furnish ample means of illustration.

That those most intimately connected with the venture are by no means inexperienced in corporation matters, is testified by the legend on the door to the outer office in New York, which reads:

O. A. Turner,
Mines & Mining.
Ely Central Copper Co.
Goldfield Souvenir Mining Co.
Decker Electrical Manufacturing Co.
Mr. Troupe.

Mr. Turner is a broad man of medium height and noticeably stoop shouldered, while Mr. Troupe wears white spats. There are numerous assistants and demonstrators to show the visitor around, and no one is permitted to come away without being convinced that he has seen wonderful things.

The Week's Incorporations.

Trenton, N. J.—Swift Auto Garage Co., under New Jersey laws, with $20,000 capital. Corporators—Charles W. S. Munroe, Robert H. Engle and David L. Swift, all of Trenton.

Cedar Rapids, Iowa—American Auto Co., under Iowa laws, with $10,000 capital; to conduct general garage. Corporators—Ernest E. Pickering, M. A. Pickering, and H. C. Kingsley.

New York City, N. Y.—American Auto Rim Co., under New York laws, with $100,000 capital. Corporators—W. E. Burroughs, Brooklyn; J. W. Cavanaugh and J. N. Axt, New York City.

Denver, Col.—Colburn Automobile Co., The, under Colorado laws, with $50,000 capital; to make automobiles. Corporators—E. D. Colburn, Hittice C. Colburn, and H. E. Colburn, all of Denver.

Buffalo, N. Y.—Buffalo Ignition Co., under New York laws, with $5,000 capital; to deal in automobile supplies. Corporators—John H. Burns, James A. Munhall and John W. Churchill, all of Buffalo.

Davenport, Iowa—Meteor Motor Car Co., under Iowa laws, with $50,000 capital; to build automobiles. Corporators—C. N. Voss, H. F. Petersen, Arno L. Petersen, J. H. Haas, and W. F. Speers.

New York City, N. Y.—Continental Automobile Co., under New York laws, with $5,000 capital. Corporators—Henry Best, Walter E. Godfrey and George W. Hess, 60 Wall street, New York City.

Denver, Col.—Elderkin Electrical Co., under Colorado laws, with $100,000 capital; to make electrical current converters. Corporators—James Elderkin, Ellen M. Oviatt, Emeline T. Rundell, Clarence A. Granger and Burton F. Rickel.

New York City, N. Y.—National Auto Top Co., under New York laws, with $5,000 capital. Corporators—Andrew Herman and John J. Bush, 1904 Broadway; Robert Perlman, 8 East 113th street, New York City.

New York City, N. Y.—Broadway Motor Cab Co., under New York laws, with $100,000 capital. Corporators—Samuel K. Kellock and Frank P. Reilly, 60 Wall street; Mabel Gondchaux, 218 West 112th street, New York City.

In the Retail World.

The Marshall Automobile Co. lost two cars in a fire at Marshall, Texas, on January 17th. Loss, $3,000.

Devaney & Co., Hastings, Minn., will build a one story stone garage. It will be located at Third and Vermillion streets.

W. M. Ball, a liveryman at Devil's Lake, N. D., and C. A. Stottler, of Grand Forks, have formed a partnership and will establish a garage at the former place. Ball's former stables will be transformed into a garage.

The Elmore Motor Car Co. has opened sales rooms in Cleveland, with F. S. Rathwell and J. A. Carter in charge. The branch is located on Euclid avenue near East Nineteenth street, in the quarters just vacated by the G & J Tire Co.

The Studebaker Automobile Co., South Bend, Ind., has opened a branch house in Seattle, Wash., in connection with the Studebaker Bros. company northwest vehicle sales department at 308 First avenue, south. C. J. Zintheo, who formerly had the agency, will be in charge.

Two cars were destroyed and six others damaged in a fire which broke out in the Fifth Avenue Automobile Garage, at 45 West Forty-fourth street, New York City, Monday afternoon. The flames were subdued in fifteen minutes. A broken electric light wire is given as the cause.

J. B. Terry & Co., who have carried on an extensive electrical business in Cedar Rapids, Iowa, for a number of years, are preparing to "go into automobiles." Repair work of all kinds will be the specialty, and the building occupied by the firm will be enlarged to meet the requirements.

Ground has been broken for the new sales building of the Buick Motor Car Co., at McGee street and Admiral boulevard, Kansas City. It is to be a three story structure of dark brown paving brick with Carthage stone trimmings. The dimensions will be 95x72 feet and the cost approximately $40,000.

Jacobs & Bartlett is the name of a new firm in Boston, and is located at 887 Boylston street. Jacobs was formerly with the Thomas agency and more recently sold the Kilgore shock eliminator, and Bartlett has been connected with the Royal Tourist agency. The firm will handle the Allen-Kingston car.

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AGENCY BARS ARE NOT LET DOWN

Licensed Association Refutes Reported Abandonment of Its Exclusive Policy —Will Reaffirm Its Position.

Although it was reported that the Association of Licensed Automobile Manufacturers had abandoned its exclusive agency policy, or at any rate, would not longer object to licensed agents handling unlicensed cars, such proves not to be the case. It is understood that the report grew out of a circular letter to that effect which was issued by an official of another organization but General Manager Budlong, of the A. L. A. M., stated that far from abandoning the exclusive policy or winking at evasions, it is the intention of the Association to reaffirm its position and to make it unmistakably clear and emphatic that all who violate the policy will pay the penalty. Budlong is now engaged in drafting a letter along these lines.

New York Supply House Changes Hands.

The Detroit Motor Car & Supply Co., at Broadway and Eightieth street, New York City, has been succeeded by the Green-Beebe-Weed Co., Inc., the latter having bought the business, lock, stock and barrel In addition to handling a complete stock of automobile accessories and supplies, the old concern was New York representative for the J. N. Willys Co., of Elmira, N. Y., which connection has now been terminated. The new company will devote itself to the accessory and supply business exclusively.

Overland Makes an Offer to Creditors.

The Overland Automobile Co., Indianapolis, which found itself in straits due, it is said, to its sponsor, D. M. Parry, having over-extended himself in the financing of a trolley line, is seeking to effect a 40 per cent. settlement with its creditors. A number of them already have accepted the offer and if the others are brought into line it is the intention to reorganize the company, giving the larger creditors stock in payment of their claims.

Death of Daniel C. Stover.

Honorable Daniel Carroll Stover, one of the foremost and the wealthiest citizens of Freeport, Ill., died at his home in that city, Thursday morning last, 16th inst., after an illness extending over nine months. At the time of his death Mr. Stover was president of several companies, among them the Stover Engine Co. and the Stover Motor Car Co. He was in his 69th year.

Wagon Makers Choose a Manager.

Walter Wardrop, publisher of Power Wagon, has been appointed manager of the Commercial Motor Vehicle Manufacturers' Association, the foundation of which was laid during the Chicago show. Concurrently, Wardrop announces that the headquarters of the association will be established in Chicago and that "in the future it will conduct all national shows as well as all public demonstrations of industrial motor vehicles." The officials of the organization are: President, G. M. Weeks, Weeks Commercial Vehicle Co., Chicago; vice-president, Oscar Lear, Oscar Lear Automobile Co., Springfield, Ohio; treasurer, H. F. Hamilton, Rapid Motor Vehicle Co., Pontiac, Mich; secretary, J. E. Burke, Lambert Motor Truck Co., Anderson, Ind. Board of managers; the president, vice-president, secretary and treasurer, and G. V. Rogers, Mitchell Motor Car Co., Racine Wis; Hayden Eames, Studebaker Automobile Co., Co., Cleveland, Ohio, and H. C. Eddy, American Motor Truck Co., Lockport, N. Y.

Swetland Purchases "Motor Age."

The Motor Age, of Chicago, was this week sold to the Class Journal Co. of New York, which also publishes the Automobile Although the fact is common property in Chicago, and although A. B. Swetland is on the scene, H. M. Swetland, president of the Class Journal Co., at his office in New York, refuses either to confirm or deny the transaction. Mr. Swetland has owned a number of trade publications and has been very successful in their purchase and sale.

Harper and Elliott in New Positions.

H. B. Harper has resigned the management of the advertising department of S. F. Bowser & Co., Fort Wayne, Ind., to assume the similar berth in the Ford Motor Co., Detroit, left vacant by the resignation of E. Le Roy Peletier. Harper's place with the Bowser people has been filled by the appointment of B. W. Elliott.

Jamestown Medals for Manufacturers.

The awards made to the automobile exhibitors at the Jamestown exposition were as follows: Gold medals, Dayton Motor Car Co., Stoddard-Dayton car; Reo Automobile Co., non-stop car; Studebaker Bros. Mfg. Co., automobiles, street sprinklers wagons and trucks. Silver medal, Haynes Automobile Co., chassis.

Elderkin Electrical Incorporates.

To take over the patent for an invention of James Elderkin, which is built around a compound for converting an alternating electrical current into direct current, the Elderkin Electrical Co. has been organized at Denver with $100,000 capital. The company expects to establish several charging stations in Denver.

G & J Philadelphia Branch to Move.

On February 1st the G & J Tire Co's Philadelphia branch will be removed to 713 North Broad street, next door to the place it now occupies. The new store will afford a corner location and about twice as much room as the present quarters.

MORE CARS FOR NEW YORK CITY

But Only One Permits of Competitive Bidding—Four Others to be Purchased by Private Arrangement.

The New York Police Department is in the market for a four-cylinder, five-passenger gasolene touring car of not less than 24 horsepower. Bids for it will be received up to 10 o'clock next Monday morning, 27th inst., and, what makes the matter of moment, there appears to be no "joker" in the specifications which will confine the bidding to one manufacturer. The nearest approach to anything of the sort is a provision requiring that the engine shall be fitted with a governor, which, small as it is, will greatly serve to restrict the competition, as comparatively few engines now employ governors. The specifications are unusually far-reaching also in that they require even a guarantee of the physical properties of the steel, as follows:

"Nickel chrome steel shall be used for axles, crankshafts, all shafts, all gears, and all other important parts. Its composition and properties shall be as follows: Chromium, 1.40; nickel, 3.30; carbon, 0.30; silicon, 0.26; sulphur, 0.015; phosphorus, 0.013; manganese, 0.40. Tensile strength: Untreated not less than 110,000 pounds; elastic limit, 95,000; extension in 8 inches, 16 per cent.; contraction, 60 per cent. Each bidder shall submit with his bid a guaranteed analysis and test of the steel used for the above purpose For unimportant parts, steel carrying as much as 0.025 prosphorus will be accepted."

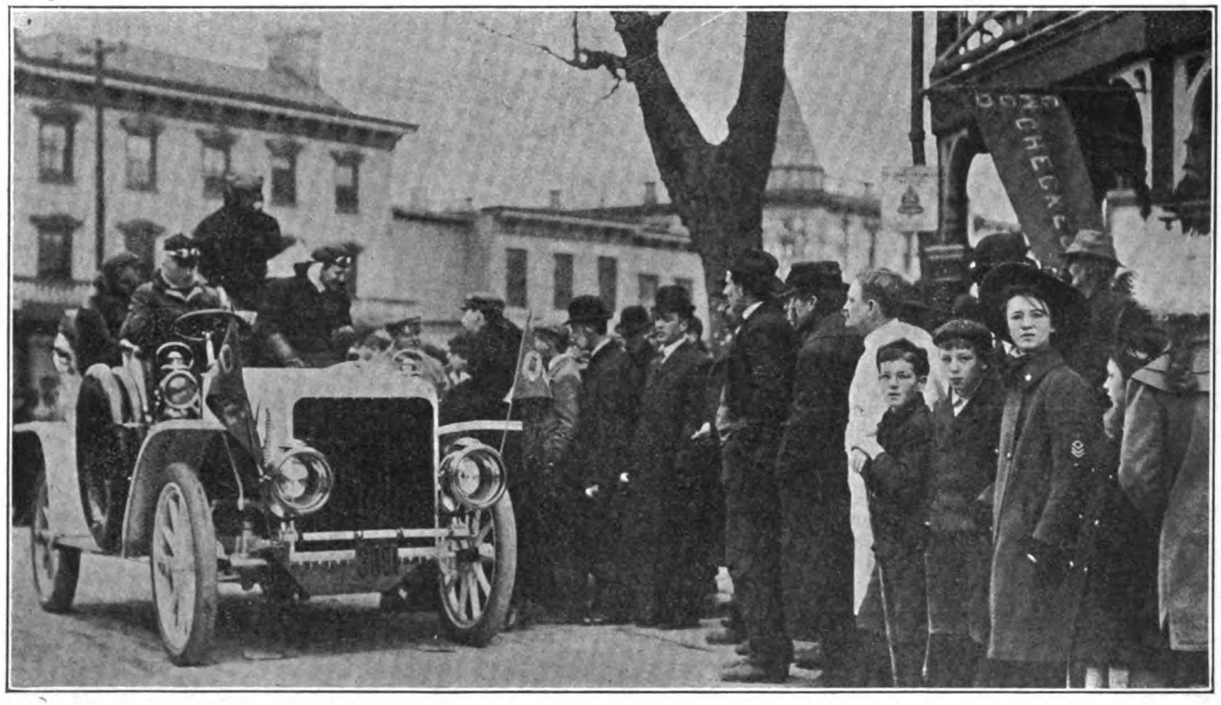
In the matter of accessories to be provided with the car, the specifications call for remarkably generous tire equipment—rear tires, 5 inches—and these "spares": one extra front and one rear casing and four extra inner tubes for both front and rear casings—a provision which will apparently considerably reduce the cost of actual maintenance of the car.

It is understood that the specifications that apply in this instance were drawn with the view of making them the city's standard.

The New York Charities Department also desires four automobiles, but they are not to be bought in the open market as is the police car, that is, not unless some one makes himself heard in opposition to the present plan to purchase the vehicles from some official favorite. The four charity cars will cost $14,000, and although the city charter prohibits the purchase of anything exceeding a value of $999, without public letting, the obliging Board of Aldermen on Tuesday last found a loophole and authorizing the expenditure of the $14,000 in a private deal. The charity department presented the naive argument that "satisfactory machines cannot be purchased except privately."

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THE INCOMPARABLE
WHITE
THE CAR FOR SERVICE



White Wins Quaker City Endurance Run

In the endurance run held January 1-2 by the Quaker City Motor Club, the White Steamer was the only car which made a perfect score on the road and also was declared by the Technical Committee to be in perfect condition at the finish. The Contest Committee would not abide by the decision of the Technical Committee. They gave credit for perfect scores to two other cars and ordered a "run-off."

The supplementary contest, held January 4th, served only to emphasize the superiority of the White. The examination then made by the Technical Committee placed the White far in the lead and, accordingly, the MacDonald & Campbell trophy was awarded to the White.

With our entry of but one car, we decisively defeated 27 gasoline cars representing 23 different makes. Thus has another important victory been added to the long list of triumphs achieved by the White—the distinctively American car.

Write for Literature

THE WHITE COMPANY
CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
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PHILADELPHIA, 629-33 North Broad St.

BOSTON, 320 Newbury St.
CHICAGO, 240 Michigan Ave.
CLEVELAND, 407 Rockwell Ave.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, JANUARY 23, 1908

Street Conditions in New York.

A "Warning to Automobilists" sent to the daily press of New York City by the Automobile Club of America suggests that the municipal officer responsible for the pavement of the streets has not profited by the lesson that was intended when Governor Hughes removed the Borough President because of his failure to properly administer the business of his department in that he failed and neglected to keep the thoroughfares in a condition fit for traffic.

In their "warning" the A. C. A. specify twenty of the prominent streets to be avoided, because of holes in the asphalt, a condition which suggests the return to conditions that prevailed a year ago when the course of an automobile presented the appearance of a ship without a rudder as the machine was steered all over the streets in the desire to prevent broken wheels and axles, as well as to preserve the comfort of the occupants.

Is the re-elected Borough President entirely incompetent or is it merely a defi to the power that removed him?

Labor and the Commercial Vehicle.

While the labor problem is commonly held to be the chief stumbling block in the way of the immediate acceptance of the commercial vehicle by a wide variety of users, it is not as readily to be seen that no more resistance should be offered to commercial progress in that quarter than in the ordinary affairs of the business world. The fact that it is difficult to secure the services of treasurers who are honest and faithful in the performance of their duties, never has deterred concerns handling large monetary interests from electing men to direct the operation of their funds. The difficulty of securing good cooks never has driven the patient housewife into the kitchen, nor her husband to the restaurant. New obstacles merely introduce new methods of overcoming such hindrances to advancement, and the world at large recognises the ability to develop men in equal measure with the development of their duties as one of the greatest assets of the successful executive.

"It is a sign of administrative weakness for a concern to advertise its inability to compel its operatives to attend to duties which other concerns succeed in having performed without much difficulty"—is the terse comment of one power wagon user regarding another's abandonment of his automobile service because of the difficulty of securing efficient attendance. It is perfectly true without doubt that the causes leading to the relinquishment of a substantial investment in commercial rolling stock were in this case the same as have led to enormously disproportionate maintenance charges in other cases, and have gone a long way toward hindering the advancement of the commercial vehicle propaganda. But to discharge the horse simply and only because of the ignorance of its driver is a piece of ill-logic which should never be tolerated, and savors of a mismanagement which, except in a novel system such as that of motor traction, would not be countenanced anywhere.

The entire commercial vehicle problem at present is overshadowed by the stigma of its novelty—a stigma which prevents business men from applying to it the close analysis which they are accustomed to using in other departments of their business. If the labor problem is the greatest drawback to the successful adaptation of motor traction to existing business conditions, then it is the labor problem which must be faced. But it is pueril to regard it in any other light than as a labor problem, or to discard the system as useless when its application is known to have been faulty.

Block the "Private Arrangement"!

The City of New York finally having formulated specifications, which, save in respect to engine governors, permit open bidding on automobiles required for municipal use, on a fair and equitable basis and which, at the same time, assures the selection of high grade cars, it should be some one's or some organization's business, to insist that $14,000 of the taxpayer's money shall not be handed out for the private purchase of the four automobiles required by the Charities Department.

It is true that the commissioner of that department is very anxious to make his "satisfactory" selections privately and that the Board of Aldermen has authorized him to do so, but those most concerned should not sit supinely and permit the "deal." Loud protest against the payment of the $14,000 should prove effective in blocking the "satisfactory" private arrangement. The amount of the contract is sufficiently large to make it worth working for.

Motor Wagons for Farmers.

"A revolution in pleasure, a revolution in business, a humanitarian revolution"—is the manner in which an enthusiast hails the automobile. To quote the eulogy a little further: "The railroad put a stop to stage coach inhumanities. The electric street cars put a stop to the inhumanities of city travel. Who sees a jaded team, lashed and beaten up a slippery grade with an inhuman load, but he wonders that popular sentiment does not demand the use of auto-delivery wagons. Why should a farmer keep two or three teams and slowly drag his produce to market when one automobile farm wagon will do the work more cheaply and quickly in a human and moral way."

Why, to make a still more pertinent inquiry—why does not some one build an automobile farm wagon that will do the work of the farmer more cheaply and quickly in a human and moral way, than his two or three teams will do?

Granted freely and gladly the three sav-

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ing graces of the automobile in a revolutionary way, and granted even more—that these are an accomplished fact and not a pleasant dream—the fact remains that at present the ordinary farmer has not a fair chance of replacing his horses and wagons with a perfectly suitable equivalent. He may invest in any one of a dozen or so of motor trucks any one of which is suitable for heavy duty under certain conditions, each of which is the product of good engineering practice, and each of which will replace from two to three horsed wagons if given a fair chance. But counting all the limitations to their service which a perfectly fair judgment must acknowledge, probably none of them offer inducements such as to make them very attractive to him for the routine work of the farm.

The farmers' automobile—the light vehicle especially adapted to rural use, is a present day reality and whether a permanent type or not, is finding favor with the rural user. The farmers' wagon must be built along the same lines, psychologically at least, in order to meet with an equally cordial reception. The motor buggy appeals to the farmer because first of all it is a buggy. The motor farm wagon must also be a wagon first and always, in order to meet with complete approbation in the country districts. Not that it must of necessity have the outward semblance of the typical farm wagon in every respect, but that it must be staunch and simple; that it must not constitute too much of an innovation in the vehicular line. The farmers' wagon must be able to negotiate the stubble field, the woods road, the cart track, and the sandy highway with equal impartiality, it must be safe in operation, not given to setting fire to highly inflammable loads, simple to maintain, and easy to understand.

The stack of discarded mowers, gas engines, threshers and pumps behind many a wayside barn and the idle windmills in the fields are monuments to misguided investment and inability to comprehend the requirements of machinery, which is lamentably prevalent. But it shows that a market for farm machinery exists, quite as well as the opulence of the reaper trust shows it. The rural attraction is a strong one on the market, but it is wiser to encourage its lasting development than to handle it with regard to present sales alone. The farm wagon proposition is beyond question a winning proposition. But it must be handled on a wagon basis, because the farmer thinks in terms of wagons and he must be approached in his own language.

Types that are Disappearing.

Considerable ingenuity is being displayed in the designing of vehicles to fulfil more or less specific purposes. The time when the automobile was sufficient unto itself simply because it was an automobile, is well passed. Also, it would appear that to a certain extent the convertible body is going out of fashion. That is to say, the balloon top and the demountable limousine are giving way to the full limousine and landaulet types, while the latter affords the accommodation formerly accorded by the types mentioned. The landaulet, as well as the runabout with folding rumble, are convertible to a certain extent, to be sure, but in a totally different way, since they are useable in either of two capacities at any time. It is the special car for the special purpose, which finds most favor at the present time.

Doubtless in the range of low and medium priced vehicles, there is and will be always, a demand for combination cars of one sort and another. Such machines must cater to the requirements of the user who is more or less cramped for money and must utilize his automobile in an economical and largely a business way. With the owner who is able to afford a better machine, however, the machine made for the purpose which is to furnish its use, is the machine which is likely to prove most attractive.

In catering to this sort of demand, the makers are acting not simply on the precedent of the carriage trade, but also with considerable wisdom. With a single chassis as a basis of construction, many different varieties of pleasure car may be constructed at comparatively low cost. A good range of types, gives the maker standing, increases his chances of pleasing the possible new customer, and further increases his chances of retaining the patronage of the old. Hitherto, much stress has been laid on mechanical improvement. This is no longer possible in the same degree, nor is it always advisable to play too strongly upon the occasional changes in design which may be thought necessary. Consequently much depends upon the discretion expended in choosing body designs, and though the trend of the market evidently is in that direction, it is well to emphasize the importance of a movement which is as certain as it is significant of changing conditions in the industry.

COMING EVENTS

February 1-8, Providence, R. I.—Show in Providence State armory.

February 3-8, Kansas City, Mo.—Kansas City Automobile Dealers' Association's annual show in Convention Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory.

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association's show in Central armory.

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

Accident with a Possible Moral.

Despite its scientific banking, another spectacular accident has been added to the growing list of casualties on the Brooklands motordrome in England—this one being due to a cause so remarkable as to justify comment. The basis of the disaster which ruined the car and nearly cost its driver his life, was the bursting of one of the hind tires. Instead of behaving as most burst tires do, however, this one stuck to the wheel long enough to become wedged between the rim and the frame, thus locking the wheel and completely upsetting the control. After a prodigious evolution the machine landed on the far side of a roadway which tunnels the track and on its wheels. The unmistakable evidence that the performance was due to the wedging of the wheel rather than to any loss of control owing to the deflation of one of the tires, adds another item of proof to the theory that such accidents are seldom caused by tire deflation alone. But the possibility of locked wheels may come to be held as a strong argument against the use of large tires, or what amounts to the same thing, of body clearances less than the width of the tire. If this comes to be recognized as a real menace to safety, the lesson will prove to have been an important one.

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NEW MATERIAL FOR LAW MAKING

Bunch of Bills Submitted to the Massachusetts Legislature—One of Them Provides for a Codification.

That the Massachusetts legislature will get busy, as usual, in tinkering the automobile laws was made evident long before that "Great and General Court" convened for its annual six months' job. In the shape of petitions, recommendations and formulated measures it already has a large supply of raw material on hand, while the committee hearings that undoubtedly will be given on some of the propositions will add to the volume. That some of the material will be raw indeed may be argued from past legislation on automobile matters in the old Bay State. At the same time, there is much that can be done to better the legal path of the automobile there, and some excellent suggestions are available for the steering of the solons.

The Safe Roads Automobile Association is responsible for no less than eight formulated bills which have been offered.

With the aim in view of reducing the laws relating to motor vehicles to a compact and consistant whole one of the bills provides for a codification. The automobile law has been amended so frequently that it is a somewhat difficult task to piece together the original enactments of 1903 and the subsequent changes. Two other bills are intended to perfect the law of the road. One provides that all vehicles shall carry at least one light from a half hour after sunset until a half hour before sunrise.

The second road bill of the Safe Roads Association provides that every vehicle must keep on the right side of the highway, whenever any other vehicle is in sight and whenever there is not an unobstructed view for at least 100 yards ahead; that no vehicle shall pass another going in the same direction unless the driver has an unobstructed view of the highway ahead and can pass without interfering with vehicles coming in the other direction. Under this bill all vehicles would have to keep to the right on corners and a vehicle coming in the opposite direction from that intending to pass would have the right of way.

The other bills have to do with the Highway Commission and in a general way increase the power of that board. One bill provides that the commission may summons witnesses and pay witness fees, a privilege which the governor has recommended and the commission itself has asked for, in order to make more effective its investigation of infractions of the law.

The Highway Commission in its annual report recommended that a law be passed whereby the Commission could have the assistance of the State police in making investigations. The Safe Roads Association goes further than this for it has put in a bill providing for the appointment of not more than four persons with powers of police officers, whose duty it shall be to investigate the causes of any accident in which a motor vehicle is involved, which results in the death of any person, and such other accidents as the Commission shall think it desirable to investigate. This bill, if passed, would provide the Commission with practically the same equipment for investigating motor vehicle accidents as the Railroad Commission now has for investigating railroad accidents, and the same sort of duty would be laid upon the Highway Commission as now rests upon the railroad board.

It is further provided in the bills of the association that the license of any operator who has caused the death of a person shall be at once suspended, and shall be revoked unless the Highway Commission, after investigation and hearing, decides that the accident occurred without serious fault on the part of the operator. A person whose license is so revoked cannot have his license renewed for at least six months, nor thereafter except at the discretion of the Commission.

It is also provided that the Commission may suspend and order delivered up the license of any operator whom it has reason to believe is an improper or incompetent person, or is operating improperly or so as to endanger the public. The Commission may reissue the license if upon examination it decides that it should be reissued, Under this provision it would be possible for the Commission to cancel any license and require an operator, private or professional, to pass an examination.

Still another proposed change in the law is that the license of any operator who is convicted in a court of operating recklessly or so as to endanger the public, or while under the influence of intoxicating liquor, shall be suspended until he is acquitted, if he appeals, unless the Highway Commission, after an investigation or hearing, decides to reissue it. This provision would not apply to overspeeding cases.

Other bills of the Safe Roads Association are intended to extend the provisions of the law which provides for fine and imprisonment in certain cases, to cover cases in which operators, after causing a serious accident to persons or property, run away without justifiable excuse, and to cover driving without displaying registration numbers, when such numbers were not displayed in an attempt of the driver to conceal the identity of his car. A further provision applies to cars from outside States and provides that during the seven days in which they may be driven in Massachusetts without being registered they must display the registry numbers of their home State substantially as provided in the law for display of numbers issued by the State of Massachusetts.

NANTUCKET AGAIN IN THE RING

Islanders Win First Round in Massachusetts Legislature—House Passes Bill Tending to Bar Automobiles.

Nantucket has entered the Massachusetts legislative arena for another bout with the automobile. The islanders, those of them who are afflicted with motorphobia, are possessed of that pertinacity which made them successful whalers in the days before the rock drill superseded the harpoon in the production of oil. They have had to take the count in several preceding bouts, in court and before the Massachusetts Highway Commission, but immediately after defeat they have gone into training for another go. This time they have won the opening round by securing the passage in the House of Representatives of a bill that emphatically is drastic.

This bill provides that the selectmen of Nantucket shall be authorized to regulate and prohibit the use of automobiles and motorcycles on any highway in Nantucket. This, of course, gives that board power practically to exclude such vehicles from the whole island, as the only terminus of the steamboat line plying to and from the mainland can be reached by no road not under the jurisdiction of the selectmen. The bill further provides that the decision of the selectmen shall be final, which, in effect, would place Nantucket roads beyond the jurisdiction of the State highway commission. That body, it will be remembered, is committed through its chairman, against any such entire exclusion of automobiles from the island as the selectmen of Nantucket have attempted, and this feature is a vital one in the bill.

The next round in the bout will be decided in the Senate, and it remains to be seen whether the forty men constituting that body will, in their concentrated wisdom, endorse the action of the House. It is doubtful. The House is a somewhat unwieldly body of 240 men, in which young city politicians and inexperienced rural legislators are two very conspicuous elements. The senators, as a rule, are men of large affairs, experienced lawyers, and legislators who have had some training for the work. They will be more apt to see that the Nantucket measure is special legislation of a mischievous character, and the bill, if it does not fail entirely, is likely to go back to the House greatly modified.

Worcester Wants Hill Climbing.

The Worcester Automobile Club, it is understood, intends again to put in its bill under which it hopes to revive its hill-climbing contest on Dead Horse Hill or elsewhere. This bill gives town or city authorities the right to close roads on which automobile contests are to be held.

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SAVANNAH AWAITS THE ENTRIES

Thirty Required to Assure the Three Stock Chassis Races—Local Enthusiasm for the Meet.

If thirty entries are secured before March 1st next, the proposed three stock chassis races of the Savannah Automobile Club will be held over a course near the Georgian city during that month. The dates selected are Tuesday, March 17th, and Wednesday, March 18th. Rules for the proposed meet were formally adopted by the Technical Board of the American Automobile Association this week.

Three events have been provided, as follows: for stock chassis with engines limited to a maximum piston displacement of 575 cubic inches, 360 miles; for stock runabout chassis with engines limited to 375 cubic inches, 150 miles, and for six cylinder stock chassis with engines having a greater piston displacement than 575 cubic inches, 150 miles. The long race is to take place on Thursday and the other two on the day preceding, that for runabouts in the morning. Unless fifteen entries in the long race, ten in the event for runabouts and five in the six cylinder class are secured, the meet will not take place.

There is nothing new or startling in the rules. They provide that no car shall be eligible that essentially is not a stock car, or rather a stock chassis, one that is so constructed that it can, by adding the necessary parts, be assembled into a complete car of its kind. Also that the car entered shall be subject to sale at the list price and orders be accepted by the manufacturer for any number of exact duplicates. The cars must be the product of a recognized manufacturer who during a period of one year prior to February 1st, 1908, shall have built not less than 50 cars of all models, of which not less than 10 per cent. shall have been manufactured of any model entered.

Although there is nothing unusual in the rules several features are manifest. One is that while the chassis may be stripped of lamps, lamp brackets, guards, guard irons, running board, irons and step, it must carry the regular stock hood, the loss of which during the race will result in disqualification of the car. In respect to the location of engine, transmission, dash, steering wheel and so on, the car must conform to standard equipment. The matter of exhaust is made optional with the entrant. It may be directed through the side of the hood or under the car, and in the latter case must be horizontally pointed backward, with the rear end sufficiently high to prevent throwing up dust.

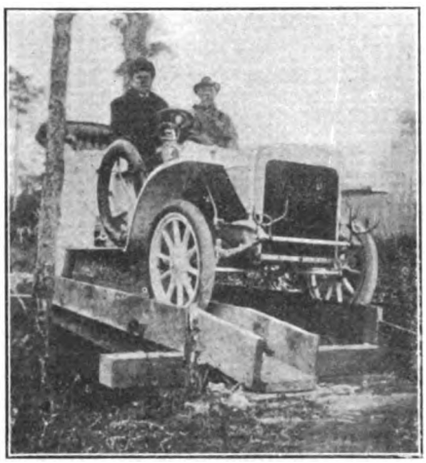
To qualify for either of the three events a car will have to show that it can cover a mile over a substantially straight measured course, under official observation of a committee of three members of the Technical Board, at the rate of 45 miles an hour.

There will be no weight limit, the restrictions being in piston displacement as stated previously. The driver or mechanicien or both may be changed during the progress of the race, if necessary. All repairs and adjustments, including tire replacements, are to be made on running time and by the occupants of the car. No extra parts may be carried, excepting tires.

Manufacturers are limited to enter two cars in each event and the fees vary.

Road Improvement Work in Florida.

Thomas H. White, president of the White Sewing Machine Co., and the father of Windsor, Rollin and Walter White, of the



THOMAS WHITE AND HIS TRESTLE

White company, has recently been doing considerable work in improving the roads between St. Augustine and Ormond, Florida. Mr. White has a fine winter home at Daytona and frequently makes the trip to St. Augustine in his car. There are innumerable little creeks without bridges along the road and it occurred to Mr. White that suitable automobile bridges could be built across these streams at very little expense. Accordingly, he has contrived what has been dubbed by his neighbors "The Incomparable White Motor Car Trestle." This device may be described as made up of two troughs each consisting of a plank laid horizontally with a plank fastened on either side in a vertical position. The latter, besides strengthening the trestle, serve as guides for the wheels. The two troughs are connected by cross pieces which keep them the proper distance apart, this distance corresponding with the tread of an automobile. Since Mr. White engaged in his work of bridge building the automobile trip between St. Augustine and Ormond has lost all its terror and more tourists are making the trip than ever before. In addition to bridging the streams, Mr. White has had the laborers from his estate at work cutting down the branches and bushes which project into the roadway.

ENTRIES FOR THE LONG RACE

Promoters of New York to Paris Run Announce Ten Have Been Made—Schedule for Early Stages.

Although the complete details of the proposed New York-Paris race are as yet shrouded in beautiful uncertainty, the New York newspaper which has taken upon itself the burden of managing the American end of the affair, this week announced that ten "formal entries" had been secured, and that there are four other European and two American cars in prospect.

Of the number already said to be entered, four are American and are named as a Thomas, Maxwell, White and Hol-Tan. The other cars and country of manufacture are De Dion, Moto-Bloc and Sizaire-Naudin, of France; Italia and Brixia-Zust of Italy, and Porthos of Germany.

The New York promoters state that a meeting of the American entrants will be held in New York City this afternoon (Thursday) when they will discuss conditions of the long ride across the United States to Alaska, to Asia, and thence across Siberia, Russia and Germany to Paris.

Although there seems to be an undercurrent of opinion that the so-called New York-Paris "race" organized by Le Matin of Paris, the same newspaper that promoted the Pekin-Paris trip last year, will be called off at the last minute because of the lateness of the season and the consequent improbabilities of the cars being able to reach Nome before the melting snows commence to run, preparations are going on for the journey across the American continent. Several cities are preparing to welcome the explorers and the itinerary from New York to Chicago has been fixed.

A five day schedule has been laid out between this city and Chicago, and the run made so that the cars will keep practically together for that distance at any rate. The first day's run, as announced, will be to Albany, a distance of 148 miles. This will be the shortest of the trip, so arranged that a start may be made from New York at an hour late enough in the morning to enable the photographic brigade to take a sufficient number of snap shots to provide illustrated matter for some weeks. The second day's run will be to Rochester, 248 miles, and on the third day the night's stop will be at Cleveland, a distance of 271 miles, the longest of the five. The fourth day's run will stop at Waterloo, Ind., 204 miles, the first day bringing the tourists into Chicago, 162 miles, where the Chicago Automobile Club is preparing to "spread" itself."

No car will be allowed to leave Chicago before 9 a. m. Thursday, February 20th after which it is expected they will be permitted to go as they please to San Francisco.

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Motor Cars as Mediums for Municipial Graft

Eighty Per Cent. of Their Use in One City is Illegitimate—Use Taxpayers' Cars and Chauffeurs as Conveniences for Officials' Families and Friends—The Frightful Narrative of One of the Chauffeurs Who Mistook the Profession but Who Kept a Diary.

Perhaps because his sensibilities have been dulled by long continued repetition of stories and instances of unfaithful or conscienceless service rendered by city officials or employes, the man in the street is too prone to accept that sort of thing as a matter of course. He presupposes that practically every man employed by a municipality owes his job to "political influence" and he does not look for faithful service from politicians. That such assumptions are not wholly true has small bearing on this story.

In a general way, this man in the street has become possessed of the idea that since automobiles came on the scene and were placed at the command of city officials and department heads that a new form of "graft" and unfaithfulness has been developed. Very many men identified with the automobile business are well aware that the evil has attained huge proportions and after two years spent in the automobile service of a large city, I feel quite competent to say that there is no form of city property that is so largely misused and abused or so generally and grossly and shamefully converted to private use as the automobiles paid for by a generous and long-suffering public.

Luxury at Public Expense.

With a few notable exceptions, these automobiles are to all practical intents and purposes, private equipages. I know that I am well within the bounds of conservatism when I assert that 80 per cent. of their use is wholly private use. There are some of the cars that usually contain a city official when "joy riding" is the pursuit, and its misuse thus is given the color of authority. But there are others that are as often used by the officials' wives, daughters, or friends. One of the most conspicuous commissioners of the city of which I write and who is a boon companion of the mayor himself, is one of the most notorious offenders in respect to this department of "graft." His family regularly uses the city's car and driver and fuel for shopping and for nearly all other pursuits of convenience and pleasure.

The cost of upkeep, that bugaboo of the motorist, never concerns these public servants. Their use of automobiles is ideal use! They buy whatever becomes necessary with a free hand and the city repair shop keeps the cars in "apple pie order." The cars are supplied free and no expense—to the users—thereafter attaches to their use If it were possible to obtain a truthful accounting of the cost of this phase of "municipal ownership," the figures surely must stagger the tax-payers who foot the bill.

The occupation of driving a city's car naturally affords an insight into the conditions that exist and it is my purpose to detail them as I found them. I say in advance, however, I do not see how any self-respecting and educated man can hold the position of chauffeur and retain his self-respect. I myself had a rude awakening in this regard, which I think makes it fitting that my first article should deal rather largely with the autobiographical and even egotistical and require frequent use of the personal pronoun, but for all of that, I think it serves the object of placing the job of "chauffeuring" in a light in which it has not previously been placed.

Status of the Chauffeur.

I frankly confess that there is a great deal of pride in my makeup—or shall I say self-respect?—for I have always held that no honest work is dishonorable, yet I cannot feel that the converse of that is true, that all honest work is honorable. For surely for one, to whom has been given the advantages of an education, whose parents have bequeathed a good name and the training which entitled him to associate with gentle bred folk and to be one of them, cannot in justice to himself, or in justice to those to whom he must make accounting of the stewardship of the talents entrusted to him, retain a position which society classifies or grades as menial, which requires a labor easily performed, a technical knowledge quickly acquired and involves a personal appearance of sufficient untidiness to preclude the possibility of sitting at table with those whose clothing is neat, hands free from dirt and grime and nails clean.

Now in using the word "society" I do not want to be construed as meaning that social set comprised of the idlers of fashion or any moneyed class; for I have ever had a humorous tolerance of them amounting almost to contempt. I have always thought of them with pity and known myself to be better than those who could not earn a living if thrown on their own resources, so when I say "society" I want to be understood as using the word in the sense of "that collective body of persons composing a community."

As a child I was given the usual education that is thought wise for the children of parents who have means: the general run of mathematics, English, modern and dead languages. I was not especially proficient in any branch and was remarkable only for a retentive memory.

From early childhood I possessed the quite common boyish trait of dissembling mechanical contrivances, and I could essemble as well. My toys, a clock or watch were made to reveal their reasons, then restored and continued in their intended capacities. In boarding school a small steam engine, obtaining its energy through a hose attached to the steam heating system, was a source of exquisite delight for many years; to be sure the engine was but a part of the whole, for by belt of thread miniatures were made to move and notes sent the length of the long hall, where at intervals the correspondents returned the replies. Batteries and small motors were also among the assets and served to develop an interest in electricity.

At college I made the 'Varsity nine in my freshman year, an evidence that athletics had found favor in my youth; the tennis championship came to me, and I did well in cycling and sprints. I entered enthusiastically into the life of my fraternity and took keen interest in a debating society of which I was one of the speakers. My mechanical tendencies were not strongly in evidence during my university life though several labor saving devices were to be seen such as an ingenious scheme of lowering and raising shades from my bed, of regulating the ventilation and extinguishinging the light when I had read myself into a condition of sleepiness. Then, too, there was an electrical alarm to warn me of the approach of sophomore invaders in time to escape through a window from their natural curiosity as to my ability to row, while seated in a wash basin of water with lead pencils for oars, to sing, declaim, etc.

Turning to Mechanics.

Finishing college with eyes much impaired from reading in bed and a fair record in studies, I accepted a position, offered by a friend, with a large electrical manufacturing company, where, starting at $3 a week I served a year as machinist's helper and in various grades until I became one of many "electrical experts" at seven dollars; I had taken the regular "student's course" and was considered equipped now to earn a livelihood. Another year devoted to yachting, riding to hounds, etc., with an occasional glance at a card table or wheel, was soon over, and I became linesman on a surveying corps of an important electric railroad, from

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which work the change to a municipal position seemed but the following of a natural bent and I became a civil service employe in, say, the Leaks Department of—well, never mind the name of the city. It occupies a very large place on the map.

For two years the routine work of leaks department inspector furnished an endless source of interest.

The extent of my territory was so great that I was naturally interested in anything which promised transportation possibilities in place of the horse and carriage, or public traction companies. Because of this interest I had bought a motor bicycle and made it reveal to me its mysteries, my first contact with an explosive engine. By it and from it I learned of the jump spark and timing of valves and their why for, until I felt competent to handle a more ambitious vehicle.

Amateur Chauffeuring.

At this time there was stored in one of the city's stables a motor car which, having been a source of trouble to the commissioner, had been discarded and was forgotten as an asset of the department. I knew of its existence and asked for it for my own use. As my position would not warrant the expense of a chauffeur, the salary of his position being twelve hundred, whereas mine was but a thousand, I operated the machine myself, soon becoming able to get most satisfactory results, in fact, so satisfactory that the car with me as an operator was in frequent demand by officials of the department whose work did not justify the maintenance of a motor outfit for them; in consequence, I often became actually the chauffeur of my confreres, my own official identity being sacrificed to this new demand on my utility.

I am not sure but that the work I was now doing so frequently was more agreeable than my regular duty. On days when I drove for another I had no report to write out, and my eyes welcomed this relief, for frequently the evening hours were required for detailed statements of conditions observed or complaints answered. The freedom from confinement in an ill-smelling, poorly ventilated court room where much of my time was necessarily spent; the absence of "scenes" when we arbitrarily removed a "contagious disease" from protesting relatives to reception hospitals. The freedom from necessity of antiseptic baths after contact with disease; no sickening cellars or putrid privies, or any of the thousand disagreeable features which, after the novelty of the work wears off, are not compensated for by the humor or enchanced by repetition. As an offset of this was the grease which left its impression on the hands and nails, or clothing, and the dirt which seemed to cling to all over you when a tire had to be replaced.

My relations with the men I drove, my associate officers, had not changed because of my assumption of new duties and releasing myself from old responsibilities. We drove about from ward to ward, smoking, laughing, stopping at my home for lunch if in that vicinity, or at their homes if more convenient; at restaurants where one or the other discharged the reckoning, and at all times and in all ways the social condition was unchanged.

In the Regular Ranks.

Week by week the number of hours given to my regular duties became less and less until finally there was seldom a day when my own work was as important as my driving; when this condition arrived I began to give serious thought to the advisability of transferring to the mechanical department, where as a "gas engine expert" my salary would be two hundred better a year, and with no responsibility, or any of the disagreeable conditions consequent to the work of "Board Inspection," and my duties would be the same as at present. I thought of my social status and felt that it would not be altered by the mere fact that I was accepting twelve hundred dollars for services I had been performing for a thousand. To be sure, I would become a chauffeur, but a chauffeur for the municipality, engaged in city's work, a thing different from the groom or coachman, different even from a private chauffeur, who accepted tips, ate with servants and ranked between a secretary and a valet, above the coachman, less than the stenographer. Deciding to do it I sought the commissioner with my request for a transfer and explained my motives; his negative reply was, paradoxical, as it seems, very positive.

"Why," he said, "I can't pay twelve hundred for running an old clap-trap that isn't worth two hundred."

"But," I responded, "if I can get, as I have been getting for the past four months, as much service out of a machine not worth two hundred, as your chauffeurs are getting out of your modern expensive cars, am I not worth at least as much as they?"

He pondered a moment.

"Take me out this afternoon. If you can get results out of that machine, I'll transfer you." A few days later I was transferred.

From the first I enjoyed the new conditions. With sole charge of the car I found opportunity on rainy days to develop a closer acquaintance with it; I actually became fond of it with a fondness one sometimes has for things of close association; it became that curious thing we sometimes hear of but never see, an almost entirely reliable car, always ready, always going I seemed to know its whims and humored it and it repaid in kind. Then the finance bureau condemned it and at auction it became the property of a second-hand dealer who paid the sum of two hundred and forty for it.

Types of the Chauffeur.

While waiting for another car I spent my time in the department machine shop where was sufficient equipment for any work from turning down a crank shaft to cutting threads on a rivet. Now came my first opportunity of getting acquainted with my fellow employes. Of course, I had known them, even before I had become one of them, but my acquaintanceship was casual and even their names were not surely fixed in my mind. One was the best "ground getter" I ever have known. He was hard on his car; he used the emergency brake all the time, but his eye for distance was so acute that he would take at high speed an opening between trolley car and lamp post just wide enough to permit passage, leaving the padlocks from the side baskets on the street where they had been scraped by obstructions on both sides. It seems incredible, but it is true. I have seen him do as much. Socially he was unmentionable.

Another was about as good, but even more reckless—a harum scarum individual whom everybody liked. He kept his car in a condition requiring constant overhauling, and drove when so full of whisky that he had to be held in his seat. He has turned his car to avoid a collision when traveling so fast that the skidding tore off both rear tires, and this on a popular thoroughfare of a busy city, at the noon hour. He was ready for fight or frolic, had a keen nose for commissions on lamps, tires or spark plugs, and possessed political backing.

Another was a splendid fellow who had been forced from boyhood to earn his living; he was a machinist, a mechanic, a good careful driver, reliable and honest.

The "boss" of the automobile shop, though a chauffeur like the rest of us, had successfully bluffed the powers into thinking him so expert a shop hand that his services were required in that capacity. In point of fact, he could not cut threads on a bar or bolt and get them to size. Eventually they fired him, and in his place came a good machinist who quickly left to accept a better paying position, being succeeded by another, a delightful, quiet, competent mechanic, who brought order out of chaos and reduced expenses by making parts, instead of buying them, for the foreign cars.

And last, there was Gus, the Beau Brummel of the outfit—"Heiny," we affectionately called him. He was first a helper and later was made a chauffeur. He was the one who wore "clothes," who attended soirees, who called our attention to his figure, to the symmetry of his legs, the shape of his foot, to his muscle, in fact, to everything about him, until his conceit, which passed all understanding, actually endeared him to us for the amusement he created, one whom we otherwise would have found commonplace.

Such were my associates. Others had come and gone without leaving any impress of their individuality. Some were good; some knew nothing; one, who headed the civil service list before the position was

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put in the non-competitive class—was certified to us for trial. He had trouble in starting a car on which two sections of the coil were broken down and accepted the suggestion of one of the men that the spark coil needed "charging," and took it to the master mechanic with a statement to that effect. Then he left.

A city election at this time gave us a new administration. We came under a new commissioner, and among his appointments was—call him an inspector, a young colegian who, fresh from his university, had made no attempt to earn his livelihood, though anxiously casting about for the field in which to begin. To him was assigned a low powered rear entrance tonneau car of old vintage, with a record of many miles to its credit, or rather history, and I was assigned with the car.

That my position may be better understood, I will explain that my evenings had always been spent at home, of which I was passionately fond. Literature and study were my pursuits, and I had never been required for work beyond four or five o'clock. Imagine then, if you can, the wonderment of my first day's work when at seven I was offered money with which to pay for my supper, while the superintendent and a friend went to a restaurant for theirs. The "tip" was declined and I waited with growing indignation for the next development. It came in about an hour, when with some of his friends, I took him on a round of clubs where presumably congratulations were the order. About midnight I stabled, and so ended my first day under the new regime.

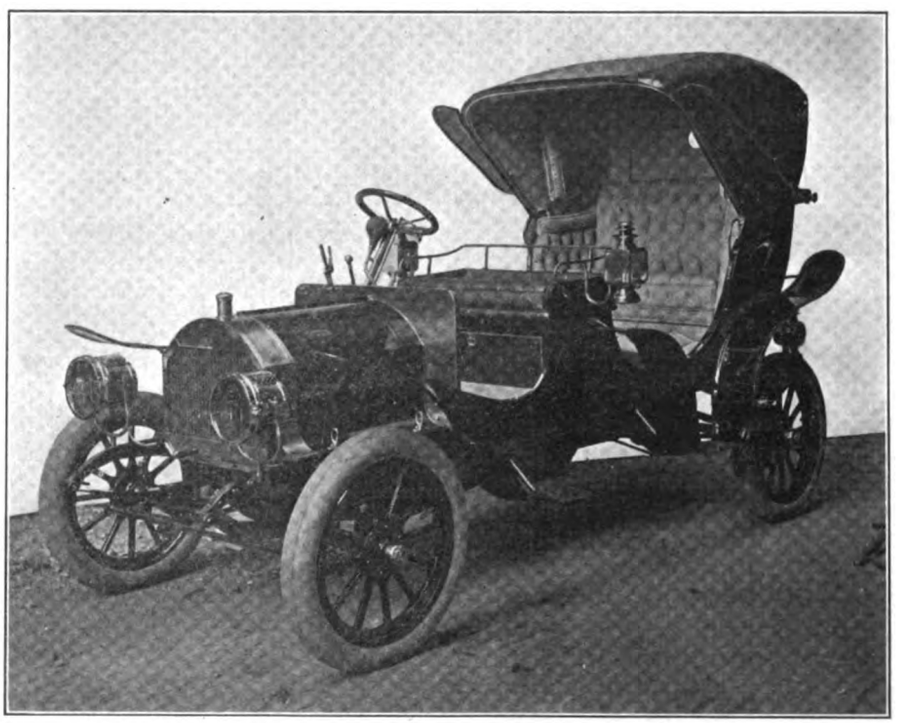
The next morning we started again and scoured the city like a fine tooth comb, up one street and down another, into hospitals, police stations, comfort stations, halls, lodging houses and what not, until I wondered if the little 10 horsepower didn't want a rest. We kept this up until about four, when I drew up before a private dwelling, surmising what sort of affliction could have visited that home. Two hours later I knew, for the superintendent came out followed by a dainty woman whom he tenderly helped into the tonneau. I removed, at his request, the "D. P. L."—which may as well be considered as standing for Department of Public Leaks as for anything else—sign on my radiator and turned my course toward one of the largest of the downtown restaurants.

The young "inspector" was beginning to play the graft game early in his career. But this was merely the beginning. He "improved" amazingly as he went along. Of these "improvements" and other things I purpose telling next week. With the preparation of this article in mind and at the suggestion of the Motor World, I kept a diary for many months. It was kept faithfully enough to preserve the names of most of the deputy's friends, both male and female. It would be improper to term all of the latter ladies.

SMARTNESS IN A NEW VICTORIA

Latest Offering in the Stoddard-Dayton List an Attractive One—Mechanical Characteristics of the Vehicle.

An extremely neat and attractive victoria body, somewhat suggestive of the cabriolet in general outline, yet thoroughly a victoria in the luxurious appointment of its rear seat, is the newest offering on the rapidly growing list of Stoddard-Dayton cars. It has just been announced by the Dayton Motor Car Co., Dayton, O. It is known as the Model 8-X Victoria, which indicates that it is an adaptation of the chassis employed in the landaulet of the same characteristic, but owing to the complete alteration of its appearance under the new conditions it must stand as practically a new vehicle in every sense of the word. In its newness it also is thoroughly up to the mark in style. And style is fast coming to be an important factor in automobile body design, particularly as applied to vehicles destined for city use almost exclusively.



STODDARD-DAYTON VICTORIA

As the picture clearly proves, it is a vehicle of comfort first of all, in which the rear section is considered of prime importance. The use of the open-backed driver's seat in front gives a tinge of dignity to the vehicle suggestive of liveried servants and stately progress. The general outline carries nothing which can offend the eye and the effect while enough out of the ordinary to be noticeable, is not sufficiently striking to be objectionable.

The mechanical characteristics of the machine are: quadruple motor, with cylinders 3⅞ by 3¼ inches bore and stroke, rated output 18 horsepower. Transmission by selective sliding gearset and cardan shaft, rear axle of the full floating type. Three forward speed changes are provided, and both gearset and rear axle parts are mounted on Timken adjustable roller bearings. The wheel base is 101 inches, the road clearance 9 inches, and the wheel and tire sizes are 30 by 4, front and rear. Semi-elliptical springs are employed, both front and rear, the former being 36 and the latter 46 inches in length, both sets being 2 inches in width. There are the usual foot brakes on the transmission shaft and double emergency brakes on the rear wheels. The regular equipment includes a full set of lamps, together with generator, horn, and full supply of tools. The weight of the complete vehicle is only 1,400 pounds, which, considering the ratio of weight to power, should provide rapid acceleration.

To Avoid Vise Marks on Body Work.

Those who have had difficulty in holding the pieces tight in a vise without leaving vise marks, which are ineffaceable on finished work, should have two pieces of harness leather cut to the size of the vise and bent over it, so as to rest against the vise jaws and to hold in position. The leather will prevent the jaws from cutting into the wood or iron, and will hold the pieces sufficiently tight to finish them. For heavier work, where it is required to apply more pressure in order to obtain a better grip, the common soft brass or lead jaws are more suitable.

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Shrinkage of Wood When Dried.

Interesting experiments on the shrinkage of wood due to the loss of moisture have recently been completed by the United States Forest Service at its timber testing station at Yale University. These experiments show that green wood does not shrink at all in drying until the amount of moisture in its has been reduced to about one-third of the dry weight of the wood. From this point on to the absolutely dry condition, the shrinkage in the area of cross-section of the wood is directly proportional to the amount of moisture removed.

The shrinkage of wood in a direction parallel to the grain is very small; so small in comparison with the shrinkage at right angles to the grain, that in computing the total shrinkage in volume, the longitudinal shrinkage may be neglected entirely.

The volumetric shrinkage varies with different woods, being about 26 per cent. of the dry volume for the species of eucalyptus known as blue gum, and only about 7 per cent. for red cedar. For hickory, the shrinkage is about 20 per cent. of the dry volume, and for long leaf pine about 15 per cent.

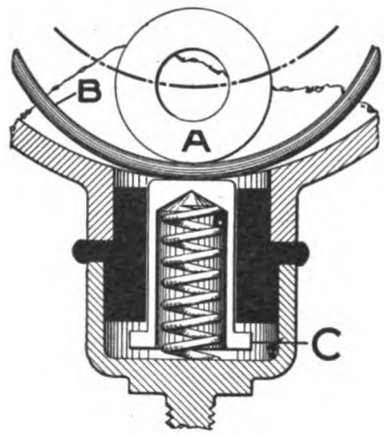
In the usual air dry condition, from 12 to 15 per cent. of moisture still remain in the wood, so that the shrinkage from the green condition to the air dry condition is only a trifle over half of that from the green to the absolutely dry state.

Lessening Wear on Braking Surfaces.

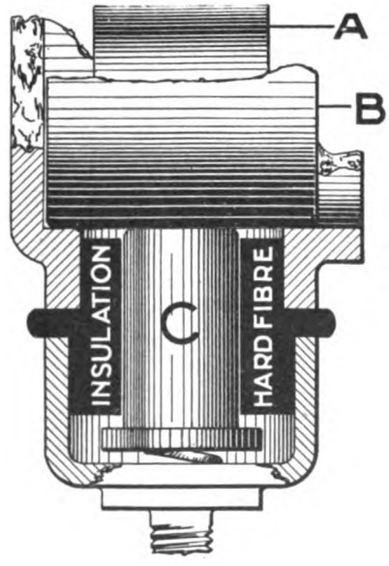
Though most drivers complain loudly of the rapid wear of braking surfaces, comparatively few of them make it a practice to clean off the drums after coming in from a run over muddy roads and after the machine has been taken from the wash rack. The drums, no matter how well protected by cover plates are bound to accumulate a greater or less amount of plain unalloyed mud under such circumstances, and the result goes a great deal further in accounting for rapid deterioration of the metal than any legitimate wear can do. It is a simple matter to flush out the brakes when mud and water have been abundant and to pour in a few drops of oil which will prevent rust and counteract any tendency to grinding when the car is first started.

Wico "Ring and Roller" Timer.

In the design of commutators it is the constant aim of the maker to do away with the effects of wear as far as possible. The plain roller contact was thought to be a great step in the right direction, if not the final thing, but in adding to the roller a loose ring through which the contact is made, the development of the new Wico "ring and roller" timer has been carried a step further in the same direction. The ring and roller timer is the latest development of the Witherbee Ignitor Co., 541 West Forty-second street, New York City. In a general way it follows the principle of the ordinary roller timer, but its action is considerably modified, and the purpose of the roller entirely changed by the adoption of the ring, which rolls around the inside of the timer casing under the influence of the roller and constantly presents a changing point of action to the current at the contact points. The effect of mechanical and electrical wear are thus materially reduced and the life of the device is prolonged.



The diameter of the ring, B, as illustrated in the accompanying picture, is greater than that of the orbit of the roller, A, so that a slight planetary action is set up, and in consequence, the points of contact on the ring are constantly changing. The insulated pole comprises a tool steel plug, held toward the inside of the casing by a brass spring and retained by a shoulder in such a position that its point just projects beyond the surface of the casing and in the path of the traveling ring. As the ring approaches, the contact plug is depressed and contact is made between it and the casing on both sides, a large area of contact and a firm union of the parts thus being assured. The rolling action, distributes the arcing tendency at the instant of break, and prevents burning either of ring or point. The ring, which is the only part susceptible to wear in any degree, may be replaced readily and at small cost.



Causes of "Bubbles" in Varnish.

Bubbles which occasionally appear after the varnish has been applied to bodies five or six hours are in reality not bubbles at all, but represent a seedy or specky or sandy condition of the varnish, due to a number of causes enumerated as follows: Imperfectly cleaned surfaces, or surfaces varnished over when located in a damp or cold room, or when colder than the varnish itself. Using a varnish that through exposure to the air for any unreasonable period of time has skinned over, particles of the skin having become mixed with the varnish; also using an unripe varnish, that is, a varnish that has been unloaded on the consumer before it has sufficiently "aged" in the maturing vats of the manufacturer. Again, using a varnish that had been chilled during shipment, thus causing the driers to separate from the other ingredients. A lousy or dirty varnish brush will develop the "bubbly" or specky surface.

Defective systems of manufacture, by virtue of which particles of the gum separate on cooling, and for a long time remain suspended in the varnish, are even in these advanced days the head and front of the specky varnish.

Exposure of the varnish to the air will occasionally cause the sanded appearance often mistaken for minute bubbles, and it develops through the operation of a chemical law. High-grade varnishes, as experiments have shown, absorb moisture easily through exposure to a damp or moist air, during application to the surface, or preceding application, and this moisture chemists have long since explained forms with the turpentine a crystalline hydrate, which separates in small grains, having upon superficial examination the precise appearance of bubbles, but which upon thorough inspection, under a glass if necessary, will be found to be crystals of matter. Some one of the above causes is at the root of the trouble described by many owners of new cars, though the particular cause cannot always be easily cited off hand.

Rambler Record of Full Time Work.

There is one factory in the industry that has not felt the depression of this or any other year—the Rambler factory in Kenosha, Wis. Thomas B. Jeffery & Co. report that it has never missed a full working day in its eight years' existence, which in these times is a boast to be proud of.

Thomas Books Taxicab Orders.

The E. R. Thomas Motor Co. report having booked an order for 50 taxicabs each from New York and Chicago parties. An order for 100 cabs from a New York company in process of formation is in prospect.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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DEVELOPING THE CARBURETTER

New Foreign Types Embodying Some Original Features—Compensating Devices Show Most Originality of Idea.

After all the peculiarities of the internal combustion engine have been considered severally and in detail, the fact remains beyond question that none of them furnish more food for thought or perplex the designer more deeply than does the problem of carburetter those who prefer orig- signers are fairly quiescent in this respect, many builders relying on commercial types of carburetter and those who prefer original designs sticking pretty closely to types already well known. This is not the case with foreign constructors, however, the last

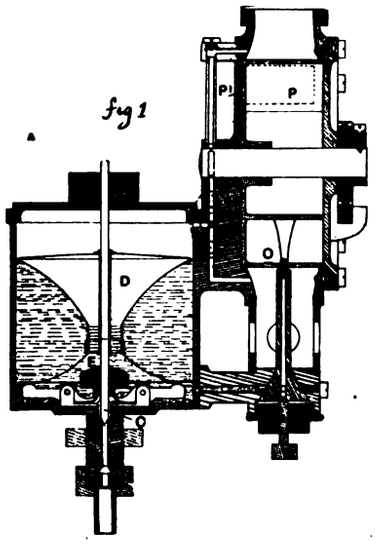


fig 1

few months having developed an astonishing amount of new thought in this field, and an equal amount of new material in the way of types, described in the local prints. Some idea of the wide range of development possible with the jet type alone, wherein the sole claim for originality must lie with the compensating device, may be obtained from a cursory glance at a number of these carburetter novelties of the more authentic and plausible sort.

One such, in which a commendable idea is found in the arrangement of the time-honored float system, is the new Gillett-Lehmann, an English device, shown in Figs. 1 and 2, wherein it will be observed that in place of the usual cylindrical float a conoidal section has been chosen, the upper portion, D, serving for purposes of floatation, while the lower section, E, actuates the weights of the needle-valve system controlling the valve, C. The float chamber is made of unusually large capacity for the pur pose of supplying enough fuel for some little running in the event of the main supply being cut off. In this way where gravity feed is employed, steep hills of considerable length may be climbed without danger of starving the carburetter.

The object in adopting the conoidal section for the float is to increase its sensitiveness beyond what is possible with the cylin-

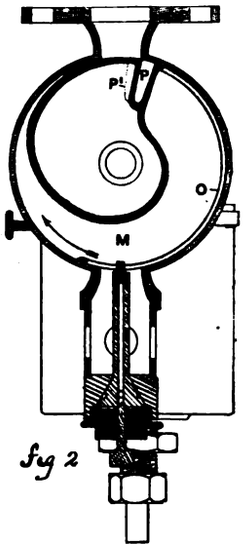


fig 2

drical form. It will be evident that as soon as the fuel level in the chamber begins to fall, a relatively large portion of the float will be uncovered, the decrease in bouyancy accelerating rapidly as the level falls so that the opening of the valve must be almost instantaneous upon the slightest diminution in the quantity of fuel in the chamber. Per contra, the valve must be closed with equal suddenness when the fuel level reaches its normal at the top of the float. The inverted conoidal shape of the

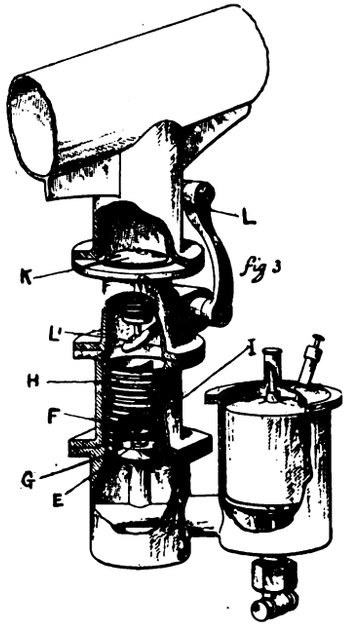


fig 3

base portion of the float gives it a dashpot effect.

The second illustration shows the mixing chamber and throttle, the latter, which is snail shaped, having been used on a previous type by the same makers. Among its particular virtues may be mentioned the fact that the wall, C, containing the air port through which the atmospheric component of the gas is admitted around the jet, M, is so contrived that when the throttle is fully opened the air supply may be practically cut off. This position, of course, is used only for starting. Furthermore, when the throttle is quite closed, a port, P, comes into registry with a second port P1, in the casing, thus admitting pure air to the cylinders when the car is coasting or the engine is being used as a brake.

Another British device, which though not strictly new, yet possesses rather novel features both in its throttle and regulator valves, is the Chenard-Walcker. Here the float chamber and its contents, as well as the jet with its cone-shaped and ridged baffle plate, E and F, Fig. 3, are of familiar form. The air supply is drawn upward

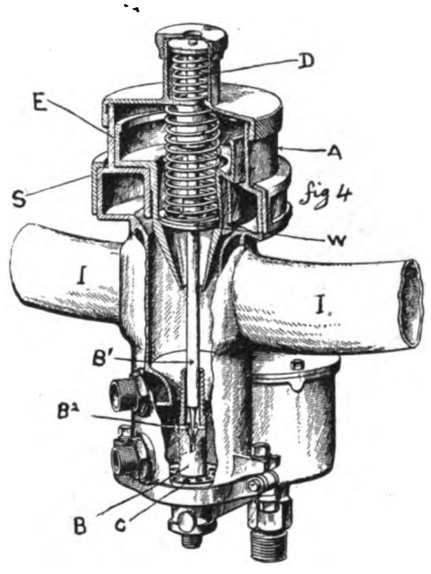


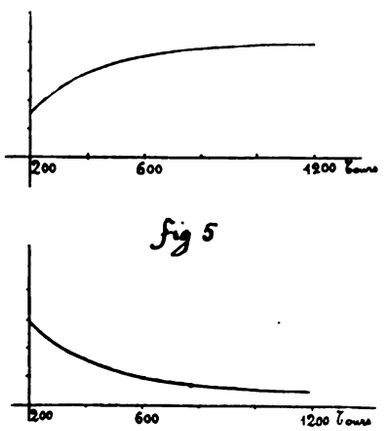
fig 4

through the annular opening, G, around the jet, the complete mixture rising thence into the hollow, corrugated, piston, H, which carries the slender needle valve, I, thereby regulating the gasolene constituent of the gas. An in-turned annular flange at the base of the piston forms a throttle upon the air and also causes the part to be elevated as the draught through it increases. Thus the movement of the piston effects the complete regulation of the gas as to quality. Quantity regulation rests entirely in the poppet throttle valve, K, which is normally held to its seat by means of the stout helical spring, K1, and may be lifted by means of the lever, L-L1, when desired. As the valve opens, the draught in the tube below is increased, and the piston raised proportionately, thus compensating for the higher running speed condition. The lever L is under foot control and is constantly used in running the engine. Two small holes in the face of the valve, however, permit starting and slow light load running without unseating the throttle.

Another ingenius method of double compensation is found in the new Westing-

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house carburetter, shown in Fig. 4. In this, the more ordinary method is adhered to, of admitting the main air supply from below and the diluent, used for compensating the gas at high speeds, from above. The jet, B, has horizontal orifices, B2, opening directly into the mixing chamber, into which the principal air supply is directly admitted from beneath by the holes, C. The auxiliary air valve, E, is located at the top in the annular chamber, A, and is of stepped construction, terminating below in a conical portion which extends downward for some little distance. The cylindrical head is

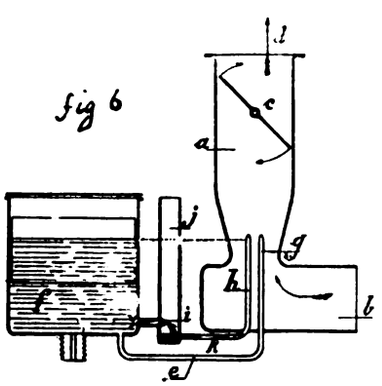


lifted by the pressure of the outer air as the speed of the motor increases and the interior of the carburetter experiences a partial vacuum, thereby permitting air to enter through a series of ports surrounding the chamber, S, whence it passes downward by the conical portion of the air valve toward the jet. The opening of the valve enlarges the annular opening between its lower portion and the walls of the regulating chamber also lifting the needle valve, B1, and admitting more fuel to the jet. The extra air passing downward, meets the upward flow from the main orifices in the base creating a sharp swirling action about the jet openings, and is finally delivered to the manifold pipes, I-I, through an annular passage surrounding the regulating chamber, wherein is located the throttle sleeve. The movement of the main valve is resisted by the main spring, W, while a second and lighter spring, D, mounted in a compartment at the top of the carburetter, opposes it somewhat and steadies the movement of the valve.

The most unique of these examples, however, is that developed by a French inventor, M. Baverey, in the Zénith. As in all other instances, the object has been to "furnish a uniform mixture regardless of speed and load conditions in the motor." If the quality of the gas be represented by a diagram in which motor speeds are measured on the base and the relative quality of the gas, vertically, evidently the perfect carburetter would be characterized by a straight horizontal line. The characteristic of the plain jet type, is shown roughly in Fig. 5, in the upper portion of which the natural tendency to enrich the mixture as the speed increases, is clearly brought out. In theory, the compensation required to produce the desired straight line, must take the form of the lower of the two curves, which is so drawn that if superposed upon the other the compound of the two curves would be a horizontal line.

In the Zénith carburetter, an effort has been made to compensate the mixture by annexing to the plain jet carburetter a second and supplementary one the characteristic of which shall follow the line of the lower curve in Fig. 5. The method of construction is shown diagramatically in Fig. 6, in which the regular float system, f, the main jet, g, the air intake, b, and the throttle in the upper part of the mixing chamber, a, are perfectly regular. A supplementary chamber, j, into which fuel is admitted freely through the regulated opening, i, is open above to the atmosphere, and below through, k, to the second jet, h. Under ordinary circumstances, it is evident that the fuel flowing from the float chamber will find its level in the chamber, j, but that owing to the free access to its surface of the air, as well as to the reduced length of the tube leading to its jet, its delivery must be considerably greater than that of the main orifice, when the motor is first started, or is running very slowly.

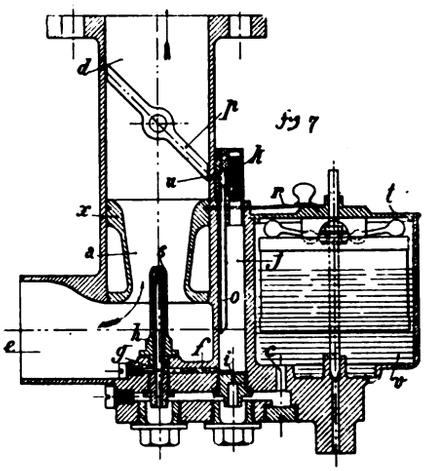
As the motor speed increases, the delivery from the second jet soon becomes so rapid as to exhaust the supply in the secondary chamber, j, so that only as much fuel can flow from the jet, h, as may pass the small regulated opening, i, in the wall of the float chamber. The delivery from the main jet, on the other hand, is accelerated with the increasing suction at high speeds, so that the tendency is to equalize the quality of



the mixture throughout the entire range of speed.

In Fig. 7, the device is shown in working detail. The main and supplementary jets are made concentric, the secondary element being the outer. Eliminating this, the carburetter will be found to be of elementary type, but minus any extra air valve connecting with the mixing chamber. The small port, i, admits a small and predetermined amount of fuel to the vertical chamber, j, which is open to the atmosphere from above, but protected from dust by a screen k. The fine bore, f, leads the supplementary fuel to the outer tube, s, surrounding the main jet, h, and the general action is ordinarily as indicated in the scheme just outlined. A small tube, o, however, leads from a point part way up the secondary chamber, j, to a point in the intake pipe, u, where it communicates with the interior of the latter when the throttle is open, but is cut off when the throttle is closed.

This device serves a two-fold purpose. When the motor is at rest, the chamber, j,



fills with fuel to the same level as the float chamber, so that the bottom of the tube, o, is submerged. When the motor is started, the suction in the small tube, o, becomes very strong; so strong, in fact, that a small quantity of fuel is injected directly into the mixing chamber at the throttle, instead of being carried around through the jets, the effect being that starting is made possible without flooding in the usual way. Similarly, when the motor is turning so slowly that an insufficient quantity of fuel is lifted from the jets to form a suitable mixture, the level in the supplementary chamber becomes high enough to allow a small quantity of fuel to be drawn through the tube, o, thus priming the intake. The flat spring, r, serves the double purpose of clamping in place the cover, t, of the float chamber and locking the Venturi cone, x, in position in the mixing chamber, a.

Leaks in Flanged Connections.

One of the most fruitful causes of leakage in flanged pipe connection arises from the careless habit of many mechanics of drawing up the bolts unequally when assembling the motor. It is a simple matter to gauge the tension of the nuts closely enough for all practical purposes by observing the movement of the wrench and giving the same number of turns to all the nuts. At the same time, careless manipulators if unwatched, will frequently set down one nut as far as it will go, drawing up the others in the same way afterward, thus skewing the coupling and straining the flanges far beyond their natural capacity without a tight joint.

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FRAMING NEW LAW FOR NEW YORK

Proposed Provisions for New Enactment in the Line of Uniform Legislation—Graduated License Fees a Feature.

Although it appears to have escaped public notice at the time, action was taken last week by the Board of Aldermen of New York City on a portion of the Mayor's recommendations in regard to the use and abuse of automobiles in the city. The most radical and alarming provision called forth in this connection is that requiring all motor vehicles to come to a full stop before crossing an intersecting street or avenue on which a surface railroad is operated. In the matter of automobiles used for purposes of hire, whether the so-called sight-seeing vehicles, or cars of smaller capacity, a schedule of licenses is established, covering both the vehicle and its driver, while the provisions affecting cabs and carriages used for hire in the city are made to apply to motor vehicles so used. This action was taken at a meeting of the board on Tuesday, 14th inst., when the regular annual revision of the city ordinances was brought to a conclusion, and the necessary action was taken to make the work effective.

No record appears of any action upon the Mayor's recommendation in regard to the use of siren horns in the city, or to the use of muffler cutouts, the emission of smoke from exhausts, or the curtailing of the use of acetylene headlights within city limits. The licensing provisions, however, are complete and specific.

The clause affecting the control of cars at the intersection of streets on which street railway lines are laid, comprises merely a single sentence tacked onto section 555, Article 7, Chapter 13, of the "Rules of the Road." The body of the section relates to the requirements of stopping on signal from the drivers of restive horses or other domestic animals. The addition says that "Every automobile or motor vehicle shall come to a full stop before crossing an intersecting street or avenue on which a street surface railroad is operated." It will be observed that the requirement contains no stipulation as to the presence of cars on the tracks at the time.

The ordinance affecting the use of motor vehicles as public conveyances appears as a separate section of Chapter 8, under Article 3, relating to special regulations and rates. The text of Section 373 entire, is as follows:

"The Mayor of the City of New York shall, from time to time, issue licenses, under his hand and seal, to so many and such persons as he shall think proper, to keep for hire in the said City, automobile coaches, carriages and cabs, not seating more than four passengers, excluding the driver or chauffeur, in all, designed for propulsion by electricity, gasolene, or similar motive power, and may revoke any and all of said licenses for cause.

"The provisions and penalties of the ordinances of said City of New York relating to the licensing of hackney coaches or cabs, and of drivers thereof, and to rates and prices of fares, so far as the same may be consistent, shall apply to coaches, carriages and cabs to be licensed hereunder, and to the owners and drivers thereof.

"Every such automobile coach, carriage or cab shall be equipped with a bell or horn, to be used to signal its approach to pedestrians and to other vehicles.

Section 374, controlling the operation of motor vehicles of greater seating capacity than the above, reads as follows:

"No automobile carrying more than four passengers for hire, including sight-seeing automobiles and power vehicles of every description, shall take up or carry any person for hire, unless duly licensed so to do. The fee for such license shall be estimated on the basis of the seating capacity of such automobile, as provided in Section 351 of these ordinances. The Mayor shall also issue an annual license to the driver or chauffeur of any such automobile, the amount of which shall be one-quarter of the license fee for such automobile; but in no event shall the amount paid for such chauffeur's license be less than $10 annually."

Under the section governing the granting and regulation of licenses the word "chauffeurs" has been inserted, while the subsequent clause fixing the amounts of licenses for vehicles plying for hire, it is provided that "For each public automobile having more than four seats for passengers, for each seat thereon," the annual annual license fee shall be $1. For each public hack or automobile hack having not more than four seats for passengers, the license fee is $3 per year.

Buffalo Plans Exorbitant License Fees.

Having been defeated in its efforts to tax all motor vehicles Buffalo, which evidently needs the money pretty badly, has determined to mulct those who operate and maintain motor vehicles for public hire. By the ordinance drafted by the city attorney for approval by the Board of Aldermen a sliding scale of taxation is outlined that will doubtless not be received with any manifestations of great joy. If passed by the city fathers a sight-seeing car carrying 30 passengers will be "squeezed" for the small sum of $450 yearly, while a touring car carrying eight passengers or less will be required to pay $35 for a license; touring cars carrying more than eight passengers will have to pay $15 a head. "Barkers" or touring car solicitors will be compelled to give up $25 each yearly. The tax on public freight transporting motor vehicles is fixed at $25 each. It readily can be seen that the shakedown, if approved by the Aldermanic Board, will yield a very large revenue.

MUST STOP AT TRACK CROSSING

Remarkable Requirement Quietly Enacted by the New York Aldermen—Other New Provisions in the Ordinance.

In the general effort being made for uniform automobile laws, New York automobilists will not be last in attempting to secure that legislation which they deem best suited to their needs. Charles Thaddeus Terry told a Motor World man this week that he expected to have his uniform automobile bill drafted within a few days and that it will be introduced in the New York State legislature as soon as possible, probably next week. It first will be referred to the special committee on legislation of the New York State Automobile Association, of which Mr. Terry is chairman, after which it will be sent to the legislature.

While its provisions have not been made public as yet one of the features will be a sliding scale of taxation based upon the weight and character of the vehicle, and it is thought that an effort will be made to have all the money thus derived apply directly to the building and maintenance of State roads. According to report it is proposed to divide cars into four classes—light runabouts, light touring cars, medium touring cars and heavy vehicles. The fees will be $2, $3, $4 and $5, respectively.

While this bill is being put into shape for introduction the law makers, pursuing their annual custom, are busy. Already three bills have been introduced. The first of these was presented by Assemblyman Frederick Northrup of Poughkeepsie. Mr. Northrup introduces the same bill with annual regularity and it as persistently "dies" in committee. The representative from Dutchess county would tax all automobiles $5 a year to be devoted to the repair of the highways.

Patrick J. McGrath of New York, being a new assemblyman, sought to make a fashionable debut, by introducing a bill to compel automobilists to stop and give their names and addresses and the name and address of the owner of the car when a person or property is injured.

The latest effort in this direction was made on Tuesday by Senator John N. Cordts, of Kingston. The upstate legislator wants "automobiles fitted with automatic lamps that will throw the light straight ahead and thus do away with the full light that goes in all directions and blinds people as the cars approach."

Despite the "well-meant" efforts of these legislators it is likely their bills will die the usual death when the uniform bill, being drafted by Mr. Terry, is introduced. That, too, may meet the same fate, but it is not thought likely as there will be no radical departures to cause objection, it is stated.

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PEELING OF PAINT IN WINTER

Causes of a Frequent Evil that Mars the Appearance of a Car—Some Ways of Obviating It.

The peeling of paint from springs, axle beds and other metal parts of carriage gears has furnished the painter at one time or another with days running over with trouble, but the larger share of this trouble, if seasons could be specified in detail, has come, we take it, during the cold months of the year, and, to be more definite, during the coldest days of these cold months, says Carriage Monthly.

It is known, naturally, that the peeling of paint occurs in the summer months, and during those yearly periods when we have every reason to expect paint to stay exactly in place, but such peeling, in the main, is due to errors or neglect for which, apparently, it is hard to find a logical excuse.

The peeling of paint in the winter, however, is, in the majority of cases, we feel justified in saying, due to elements of the weather over which the painter has little, if any, control. The carriage comes into the shop (speaking now of work that has to be coated from the bare metal up), and is subject for some days to the control of the painter. In the warmth of the room the metal parts expand, possibly ever so little, and during this expansion the painting and finishing are carried forward, and in due time the vehicle goes out into the bleak, cold world to eke out its days of service. But, alas! in the moment of seeming security the entire film of paint and varnish rolls away from the surface in a great, plastic sheet, which lays bare the shining metal foundation between which and the pigment no affinity exists. The system of painting may have been of the very best and without flaw—the result, under the prevailing weather and service conditions, would be the same. It is simply a repetition of the calamity which followed the loss of the horseshoe nail. The expansion of the metal in the warmth of the shop had in the biting frost outside produced an opposite effect, namely, contraction; and to such an extent had this contraction developed that the paint structure is just naturally unseated—slid off its base, as it were. In a certain shop where this peeling difficulty has been encountered repeatedly, despite the best laid plans of careful painters, the practice was some time ago adopted of using, during the winter month, a red lead and raw linseed oil primer upon all metal parts of vehicles to be put immediately into service, since which time no case of paint peeling from the above cause has been noted. Car painters have this difficulty to contend with to a large extent during the winter, and they resort to various expedients to overcome the trouble. The surface in some instances is primed with elastic finishing varnish, and in others with a patent transparent primer composed of resinous gums in connection with oils and other elastic materials, making an extraordinarily tenacious primer responsive alike to the law of expansion and contraction.

Some pigments, especially many of the dark, fine colors used in carriage painting, are naturally brittle, with a tendency to separate from the surface over which they are applied, and this disposition the intelligent carriage painter is ever industriously studying to counteract—to eliminate totally, in fact.

New Home of the Rainier.



The new building on the corner of Broadway and Fifty-sixth street, of which the Rainier Motor Car Co. became possessed on the first of the year, is a fitting addition to the elaborate structures that have been and are being erected on New York's "automobile row." With a frontage of 50 feet on Broadway and 136 on Fifty-sixth street, it is five stories high and with the basement, it is to be used exclusively for the Rainier cars, of which there are accommodations for at least one hundred and eighty.

As the illustration shows, the outward appearance is imposing, and inside one finds a thoroughness of detail in the appointments and equipment that proclaims the building adequate for the demands that are to be made upon its facilities. In addition to the executive offices and show rooms, the building houses the garage and repair and paint shops.

MAINTENANCE OF BODY SURFACE

Lack of Care a Chief Reason for Its Rapid Deterioration—Proper Method for Cleaning a Car.

The average American bent upon matters of research should encounter small difficulty in accounting for the lack of durability charged up to the automobile's structure of paint and varnish. It is not that the painter, so far as his craft practices are concerned, is blamable, but rather that, next to the actual user of the machine, the party charged with the care of it during its hours of inaction is responsible for the color that, unlike the beast of the jungle, changes its spots, or for the varnish that sheds its lustre prematurely.

The finished surface thrives or perishes according to the treatment tendered it, and without referring to the general hard service it is forced to undergo during its life on the highway, which in not a few respects is simply disastrous, it is in order to point out that plenty of the lack of durability complained of in respect to automobile surfaces should be charged directly, and without any misgivings, to the care taker or garage washer and cleaner.

A carriageman relates that not long since he witnessed the operations of one of these garage attendants, in his attempt to clean a touring car just in from a run about town. In the first place, he says, the chap ran the vehicle, a valuable one, into the blazing rays of the sun, and without an appreciable twinge of conscience, turned the hose, under high-water pressure, bang upon the surface. If there is anything fraught with greater injury to the varnish, and thus in a proportionate ratio, to the color and other coatings beneath the varnish, than this high pressure water bath through the deadly and convenient hose, it has not been catalogued, adds the carriage expert.

The automobile surface, on the whole, should be, and, we believe, really is, quite as capable of giving a good account of itself as the surface of the horse-hauled vehicle, but it has in most cases a greater exposure of surface, and a more destructive form of service forced upon it, so that in the natural order of things it is not capable of withstanding anything but the most considerate treatment in the course of washing and other care taking and cleaning operations. This much the painter owes it to himself to explain to the automobile owner or party in charge. The automobile should be washed, as a matter of fact, just as the horse-drawn vehicle is washed—with sponge and water gently applied—and lightly dried off with a lint free chamois skin; and it should be kept clean, and given other proper care, otherwise durability will be like the letter that was long looked for, but never came.

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OWNERS FAVOR A NEW HIGHWAY

Massachusetts Automobilists Declare for the Pittsfield-Springfield State Road—Work of Owners' Association.

Voting in favor of the plan for building a State highway connecting Pittsfield and Springfield was one of the most important actions of the Automobile Owners' Association, at its annual meeting, held in Boston, on Wednesday, 15th inst. The association, according to the annual report of President Tudor, now has nearly 1,000 members.

Among the things it has done during the year was the purchase of a number of signs to mark dangerous crossings or curves in the highways, all of which have been distributed free to cities and towns requesting them. Considerable aid has been given the authorities in checking reckless driving. Among other things, President Tudor said:

"The association has protested a number of restricted speed and exclusion regulations which were adopted by cities and towns, in order to keep intact a uniform automobile law throughout the commonwealth, and has successfully maintained its protests in many instances.

"During the past year 1,026 convictions have been reported to the highway commissioners. The number of arrests is the greatest in the history of the State. Out of several hundred arrests of members during the past year with which counsel for the association has had to deal, more than two-thirds of the persons concerned in these complaints have been acquitted of the offenses charged, or their cases have been nol prossed or filed in the inferior or superior courts."

The following officers were elected: President, Frederic Tudor; treasurer, John M. Graham; secretary and counsel, Francis Hurtubis, Jr. In addition to the old board of directors the following were elected: George D. Clapp, Boston; A. B Cobb, Newton; Henry N. Richards, Boston; W. A. Underwood, Cohasset; C. M. Bryant, Quincy; H. B. Stowell, Brookline; Lewis R. Speare, Newton Centre; George Tyson, Boston.

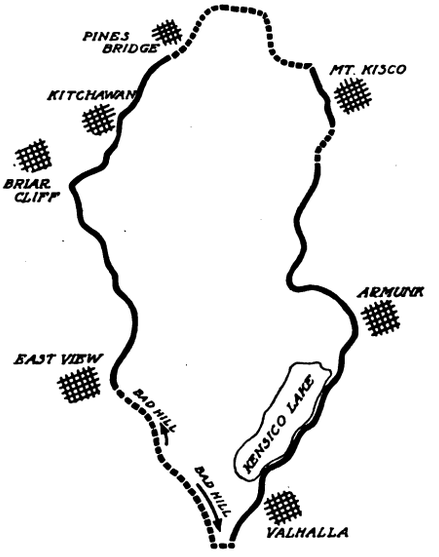
Course for the Briarcliff Trophy Race.

C. F. Redden, manager of the Studebaker's automobile branch in New York, who last week drove over the route of the Briarcliff trophy race in Westchester county, New York, is of opinion that the course is a "sportier" one than the Vanderbilt circuit on Long Island.

"From East View," said Mr. Redden yesterday, I drove through Briarcliff to Kitchawan and Pines Bridge and found the roads in excellent condition for this time of year. From Pine Bridge to Mt. Kisco the roads were poor, but this seemed to be due largely to the season. During the Spring, and after the roads are settled these are good county roads.

"The roads are exceptionally fine from Mt. Kisco through Armunk and past the long Kensico Lake to Valhalla. The only drawback being a few bad turns. From Valhalla back to East View the course leads over a road, which although good as American country roads go, is actually hilly and will test not only the endurance of the cars but the ability of their drivers.

"It is a route that is well calculated to test the skill of the drivers no less than the running qualities and speed of the cars, but if the race is to be a positive success, it is



MAP OF THE BRIARCLIFF TROPHY COURSE

absolutely essential that the course be properly policed. There are a number of cross and intersecting roads which without an efficient policing system, will make fast driving almost impossible. After going over the course carefully, I believe that a car like the 40 horsepower Studebaker, which we will enter, will have an equal chance with some of the largest racing cars. For I believe that in a 300 mile race of this kind, absolute reliability rather than excessive speed will win the race. Of course the ability to get under headway quickly, after rounding a corner, is going to be an important factor, and the long wheel base car is laboring under great disadvantages."

While Mr. Redden terms the course "sporty," others who have been over it style it dangerous. It is treacherously narrow in places, and aside from many right angled turns, there are stretches of road which resemble the wrigglings of a serpent. At one point there are three "wriggles" in less than half a mile, with the choice of an embankment on one side, a lake on the other. The possibilities for "happenings" are immense.

"SQUEEZE 'EM AGAIN" SAYS FORT

New Jersey's New Governor Aecommends Higher License Fees—He also Urges a Motor Vehicle Department.

Automobiles and public roads received some attention from Governor F. Franklin Fort, of New Jersey, in his inaugural address at Trenton on Tuesday, 21st inst., as was expected they would. The establishment of a separate department for the licensing and regulation of automobiles, higher license fees, based according to horsepower; an increased number of officials to see that the laws are enforced, more rigid penalties for violations thereof, are some of the recommendations of the new governor. At present his State exacts $7 per year for large cars and $4 for small ones.

In speaking of the demand of the public for the enforcement of the automobile laws, Governor Fort said:

"A very large percentage of the automobile drivers are careful, but there are some who are not. If the present automobile law is too stringent it should be amended. A speed of twenty miles an hour in many places is not excessive; in fact, it may be said to be quite moderate, without misstating the truth; while in other places, a speed of twelve miles an hour is more rapid than these machines should be permitted to go. . . . . There should be sufficient officials in the department . . . . to see that it (the law) is enforced, and the penalty for the violation of the law should be more severe."

Governor Fort expressed himself as highly pleased with the policy of the present highway department, and suggested that more miles of "admirable highway" should be constructed,, and "maintained after they are built." He explained that when the roads were built by State aid they were constructed for light traffic, and that automobiles have injured them to great extent; for that reason he is in favor of a higher license fee, to cover the cost of repairs.

"If the license fee method is adopted," said the Governor, "then it should be graded on the basis of the horsepower of the machine operated. It would seem as if we should get from the automobile owners a revenue of about $250,000 per year, and this entire revenue should be devoted to the repair, or the aiding in the repair of the public highways of the State, the building of which has been assisted by State aid.

"This tax need not be a heavy one upon automobiles, and the drivers of these machines are quite as anxious for the preservation of the public highways by the keeping of them in repair as the rest of the traveling public, and they will not object to a reasonable license fee, fixed upon the basis of the horsepower of the machine operated"

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Oil Sediment for Road Treatment.

At the Pope-Toledo factory in Toledo, they believe they have settled the dust nuisance and pointed the way to a phase of road improvement. The plant covers a large area. At the rear of the factory buildings is a circular speedway, while between the buildings are driveways. These roads are subjected to very severe use from testing cars constantly passing over them, going out and returning to the factory, generally at great speed; heavy traffic of large trucks, heavily loaded touring cars, etc. Naturally these drive and speedways created lots of dust and required constant repair. Much experimenting has been done, and the Pope-Toledo people say they have finally hit upon a road treatment which gives excellent results and is very economical. The Pope-Toledo factory has its own steel treating furnaces, some oil heated, and in it the sediment from the crude oil used in the heaters, sprinkled with an ordinary sprinkling can, over the surface of the roads, that has improved the neighborhood of the plant. Three treatments a season, it is said, makes the roadbeds waterproof, lays the dust, and prevents ruts, breaking of embankments, etc.

Direct Drive as a Saver of Power.

Generally speaking, the direct drive is held to be of great advantage as a means of saving power, as compared with the same speed developed on a lay shaft drive which is indirect. The latest performance of the industrious Edge-Napier testing plant, however, tends to show that the gain effected in this way is not so very great after all, although in common with all similar advertising exploits, it was intended to reveal the superiority of the system. A complete test of a 30 horsepower, 6-cylinder car, showed a maximum difference of only 1 horsepower between the power at the road wheels on the direct high and the indirect second speed, with the motor running at its most profitable rate. The difference in efficiency of the transmission system for the same motor speed revealed a variation of not more than 4 per cent. The absolute gain of the direct connection thus appears to be largely nominal in so far as the power question alone is concerned.

Manual Adjustments for Service Brakes.

Several of this year's foreign cars are provided with manual adjustments for the service brakes, the arrangement being such that the driver can readily alter the tension of the brakes in a moment or two without using any tools or disconnecting any of the linkage. The advantage of this is manifestly very great. For while theoretically the brakes should always be in perfect holding condition, the fact is that at times the abrasion of the working surfaces is very great, while at others it is necessary to have the brakes so adjusted that they may be gently applied, and at still others, so tensioned that they will lock the gear at once. On this account such an adjustment, providing handy means of altering the set up of the brakes at any time when they prove at all inefficient, is a most useful one.

Many Ways of Saying "Chauffeur."

"What's the 'chofer' doing all this time?" questioned Attorney Bell of a witness in the trial of an automobile damage suit in the Indianapolis courts last week.

"Well, to be frank, I don't remember," was the reply. "I was not paying much attention to the 'chaffewer.'"

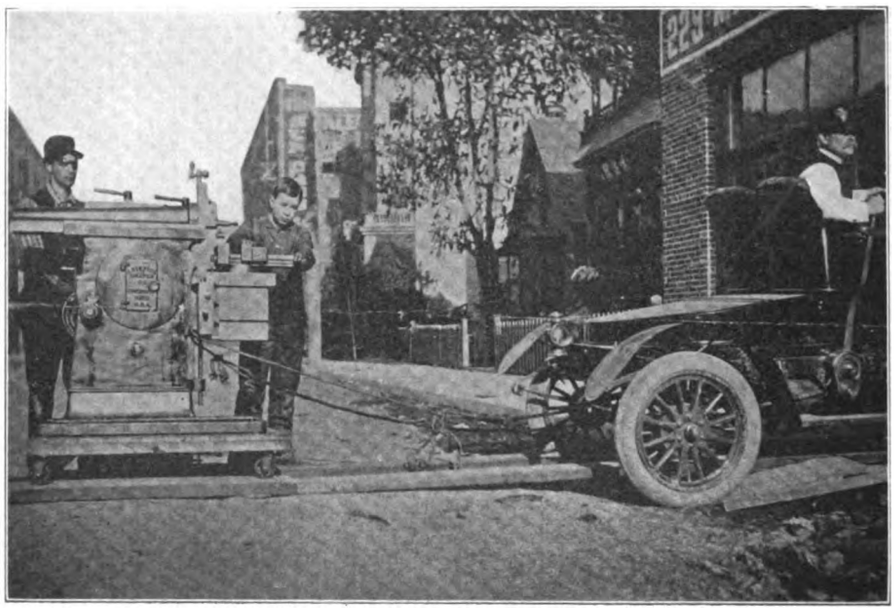
Several other witnesses were called, including a policeman and a physician, and the same question was put to each of them. The witnesses did not all agree with the attorney in the pronunciation of the word. The patrolman in great pride called it "chaff-ore," the doctor pronounced ot "chofure," one young lady noticed the "cheefer," while still another thought it ought to be "shover." As yet the correct pronunciation of the word "chauffeur" has not been hit upon.

Women to be Club Members.

It generally is acceded that in the South the genus homo are more chivalrous toward the weaker sex than is apparent in the north. Although women will not be permitted to drive in the proposed stock car race in Westchester county, New York, they will be allowed to become active members of the Automobile Club of Maryland, the club having made this decision last week. Of course, the comparison is somewhat remote, and it is not known what the Marylanders would do if a feminine member of the club should want to compete in a race of its promotion. But, anyway, in Baltimore women don't go in for that sort of thing.

Strenuous Work for an Automobile.

That the emergency uses to which the useful automobile may be put is constantly increasing is not a matter of surprise. It was a saying of that almost forgotten celebrity, Sam Patch, that "some things can be done as well as others," and this applies in large measure to the automobile in its utilitarian character, which it exemplifies in an extended list of practical service, from the delivery of family groceries to the transportation of a grand piano. Its capabilities for arduous service that would seem to be near to the limit may be seen in the accompanying illustration which aptly might be called a moving picture. The vehicle is a Rambler runabout, Model 22, owned by D. C. Wilgus, a manufacturer in Los Angeles, Cal. When recently he transferred his business to a new location he moved the entire equipment of his machine shop with this utility car. Planers, lathes and general machinery to an amount representing a value of about $12,000 was successfully transported, and Mr. Wilgus credits to his profit and loss account a very considerable amount saved in the item of truckage expense.



RAMBLER ENGAGED IN HEAVY MOVING

Backing up Their Assertions.

If Triumph grease, the red lubricant, does not command more than usual attention, it will not be for lack of opportunity afforded by its makers, the Perfection Grease Co., South Bend, Ind., who literally "show their faith by their works." The grease is a new compound which is claimed always to retain its sponginess, which will not melt and run away, and is therefore cleanly and economical, and which is not affected by cold weather. The makers back their assertions by offering to refund any expense to which a user of the grease may be put if it fails to substantiate their claims.

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ROAD REPAIRS IN NEW JERSEY

What They Cost Last Year and What Automobiles Contributed—The Commissioner Wants More.

When the New Jersey legislature enters upon the work of amending the automobile laws it is expected to derive considerable light from the annual report of State Road Commissioner Hutchinson and a paper on road repairs accompanying it.

In this paper the commissioner expresses a desire to see established in every county of the State a system similar to the one existing in France, and which recently was described in the Motor World. He would, he says, "apportion the roads in such a manner that a man with a team can take care of his section properly by spending his entire time on the roads for at least nine months in the year. In road repairs 'a stitch in time saves nine,' and wherever there is a depression on the road, caused by a rut or otherwise, it should be remedied at once. When the counties of the State adopt this system of road repair the road repair account will be considerably less than it is at present."

In his report the commissioner says: "We have 1,235 miles on roads built under the State aid law, toward which the State has contributed $2,283.097, an investment of which we are proud, and which is certainly well worth taking care of. In addition to this, the counties have built 800 miles without State aid, which they must also keep in repair.

"Under the automobile law, passed two years ago, we will have about $82,000 to distribute in 1908 among the different counties as the State's contribution toward repairs. While this seems like a large sum, I feel that the license fee should be increased, because we will need for our more than two thousand miles of roads over $600,000 to keep them in repair, allowing an average expenditure of $300 for each mile of road. This is a low estimate of our repair account. My opinion is that the automobilists will have no objection to paying a larger part of the cost of repairs, provided the money is spent judiciously and the roads are kept in good order. My experience as an automobilist is that automobiles are of little practical use if we do not have good roads and I am personally proud, taking them as a whole, of New Jersey's improved roads, and it is my one desire that we shall keep those we already have in good repair."

The commissioner then goes into deails of every county, showing for the first time what repairs have cost the State and counties for the last year. He also tells the Governor that of new roads his department has accepted 83,332 miles, and has under contract 63.086 miles, that his department has examined and approved surveys for improving 99.93 miles of roads, making a total of 245,738 miles of roads, lying in all portions of the State.

According to the road repair section of the report, there was spent in New Jersey last year for road repair $648,488.60, of which sum the State gave from its automobile licenses and fines $56,473.85, leaving the counties to furnish $592,014.75 of the repair moneys.

Pawtuxet Protests Against Speed.

Pawtuxet is one of the suburbs of Providence, R. I., and it boasts of an Old Home and Improvement Society that manifests a disposition just now to take a whack at the automobile by means of the "big stick" of the State legislature. Its committee on resolutions reported at the meeting of the society last week a set of resolutions to be transmitted to the General Assembly stating that "the Pawtuxet Old Home and Improvement Association, in regular meeting assembled, does hereby express its disapproval of the high speeding of automobiles aforesaid, and respectfully requests of the General Assembly such legislation as will further assure to the inhabitants, not only of this locality, but to the citizens of the State in general, a relief from such jeopardy." It is stated that the resolutions may be adopted when the members are again "in regular meeting assembled."

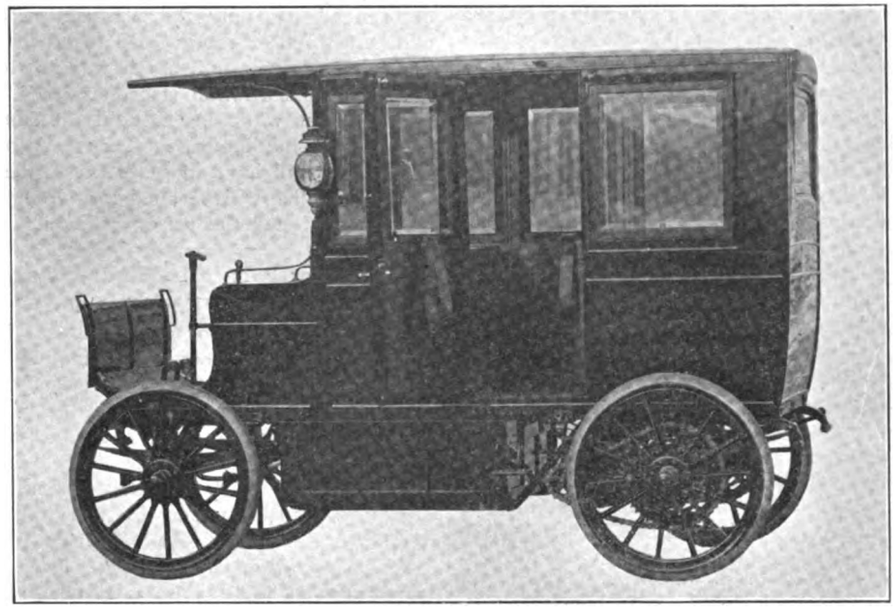
More Massachusetts Licenses Revoked.

Two licenses were revoked last week by the Massachusetts Highway Commission, both for reckless driving. Edward W. Arnold of Abington, and George C. Gokey of Cambridge, are the drivers who must surrender their "papers," the latter being commanded to return his professional chauffeur's badge as well.

AUTOMOBILE TREASURE TRANSPORT

Specially Equipped for Bank Service in St. Louis—Its Strong Box and How It is Guarded.

Literally "loads of money" make up the daily cargo of a smart looking automobile that has recently been seen stopping in front of express offices and factories in St. Louis, besides making frequent trips to the sub-treasury. In appearance it resembles an elaborate limousine, as may be seen by the accompanying illustration, and its function is to carry cash and valuables to and from the National Bnk of Commerce.



BUILT TO TRANSPORT TREASURE

The vehicle is an electric built especially to the bank's order by the Studebaker Automobile Co., of South Bend, Ind. At times the car transports over 9,000 pounds of money during the course of a day. Factories that are customers of the bank and that wish to pay off in currency, have the money sent to their places of business by means of the machine, and establishments receiving great quantities of currency during the course of the day and wishing to deposit it, send for the wagon. Inside the body is a heavy steel strong box, having five compartments and fitted with forbidding locks. At the rear, and facing the box, is a broad seat for the person in charge and the officer or guard. The vehicle is built upon a regular Studebaker electric chassis of 1,500 pounds capacity, and with a 1,000 pound load in addition to the body, has a radius of forty miles at a speed of twelve miles an hour.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

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Proposed "Pounds" for Automobiles.

Almost every city, town and village in America has its dog pound, where stray and homeless canines are impounded until claimed by owners or disposed of by the authorities, and now New York City shortly may have its "automobile pound" to meet the same requirements. Last year the street cleaning authorities displayed unwonted vigor in keeping the streets clean and their crusade reached such high proportions that they could not see the dirt close to the streets but automobiles towering above them. They gathered a number of cars that had been left standing in front of office buildings or residences while the owners of the cars were attending to business or making social calls. Naturally there was a great deal of unfavorable comment from the owners, but the department officials were firm, and insisted upon keeping the streets clear of obstructions of the sort.

General Superintendent William Robbins of the Street Cleaning Department of New York City is nothing if not polite, and knows how to encase his iron hand in a velvet glove. That he means to start another crusade against the practice of leaving unguarded automobiles in the street, is evidenced in the following letter sent out to the district superintendents:

"By direction of the commissioner, you will call on the managers of the garages in your respective districts and present his compliments, taking advantage of the occasion to inform them that this department is obliged by law to keep the streets of this city clean of all obstructions, and that they will greatly aid him in this duty by not permitting their automobiles to stand in the street in front of their places. Their doing so will be at their own risk, for the law compels their seizure by the officers of this department."

Automobile Truck for Hauling Fruit.

That the automobile will prove a blessing to growers and packers and will be the means of great saving in cost of transportation of the fruit is the belief of the Penn Fruit Company of Riverside, Cal., which has followed up its opinion by the purchase of a big truck to haul oranges from the groves to the packing houses. It is the first truck to be used in California for this purpose, and other growers will watch the experiment with interest. The new "orange truck" has a capacity of five tons and can haul 200 boxes of fruit, while a trailer can be attached to hold 100 boxes more. Hauling 300 boxes of fruit at one time will do away with four teams, while the decrease in maintenance and saving in time is expected to amount to considerable.

Western Cities Try Automobiles Patrols.

Indianapolis and Chicago have followed the lead of New York in experimenting with automobile patrol wagons. The Indianapolis "Black Maria" went into commission last week, while the Windy City's "drunk wagon" as it is called, will be given its initial tryout this week. There was keen competition in providing the patrol wagon in Indianapolis as there are two factories right "in its midst," and each wanted the honor of placing the machine. It finally was awarded to the company that bid $1,500 and it is said that it cost more than $2,500 to build the car.

Wily Turk's Scheme Went Wrong.

Turkish methods of applied substitution did not meet favor with Parisian police in the case of Vahinakin Ladar, a Turkish merchant of Paris, who was sentenced to two days' imprisonment for exceeding the regulation automobile speed laws. Ladar determined to apply the Turkish method and paid a fellow countryman to go to prison instead of himself, but it was not long before the substitution was discovered. On Monday last when he thought all danger had passed the ingenious Turk was rearrested and will have to serve the sentence. His accomplice will be tried for forgery as he falsely signed the prison register.

Governor Fort to be Club's Guest.

Governor John Franklin Fort will be the guest of honor at the annual banquet of the New Jersey Automobile and Motor Club, to be held in Newark, Thursday night, February 6th. The entertainment committee received the Governor's acceptance late last week. William H. Hotchkiss and F. H. Elliott, president and secretary, respectively, of the American Automobile Association, and Charles Thaddeus Terry, chairman of the legislative committee of the National Association of Automobile Manufacturers', also have promised to eat, drink and be merry with the Jersey motorists.

Quaker City Club's Nominations.

Nominations for officers to be elected at the annual meeting on February 6th, have been made by the Quaker City Motor Club, of Philadelphia, as follows: For President, P. D. Folwell; first vice-president, A. T. James; second vice-president, L. D. Berger, treasurer, A. T. Stewart; secretary, H. C. Harbash and I. C. Minford; board of governors, R. D. Bartlett, C. J. Swain, E. C. Johnson, G. Hilton Gantert, E. C. Lewis, E. H. Fitch, F. E. Church,, Dr. J. H. Overpeck, A. E. Maltby, E. C. Leeds, Frank Hardart, M. E. Brigham, F. C. Vanderhoof, E. F. Paist, L. E. French, N. Petry, Daniel Webster and George N. Graham.

Schultz Heads Staten Islanders.

Charles A. Schultz was elected president of the Richmond County Automobile Club, of St. George, N. Y., at the annual meeting last week. Other officers chosen were: Vice-president, O. W. Sprigg; secretary, J. J. Worrell; trustee for three years, Dr. J. W. Musgrove.

Chauffeur's Definition of a "Gump."

A "gump" is a man "who has an ever abiding weakness for posing as the owner of his employer's car after the shades of night have fallen and the said employer is enjoying more or less peaceful slumber."

This, at least, is the definition given by President Johns at the stag party of the recently organized Illinois Chauffeurs' Association, at Chicago last Thursday night, 16th inst. More than 100 chauffeurs and several invited dealers were present and President Johns defined the "gump," while taking a fling at the chauffeur who posed as the owner of his employer's car.

The association, the president explained, is not a labor union and will not have anything to do with the differences that arise between employer and employee, except to discipline any member found guilty of "'railroading,' drunkenness, or dishonesty." Several local dealers who were present addressed the chauffeurs and wished the organization a successful and uplifting career.

Colored Porter's Joyless Joy Ride.

A man once hired a negro to clear off a small piece of stubble land for him, the remuneration agreed upon being one dollar per day. The next day, the employer, chancing to go past the place, saw two negroes in the field, one laboriously sweating at the end of a grubbing pick, while the other sat upon the fence and swore vociferously at the other.

"How's this," said the employer, addressing the negro upon the fence, "didn't I hire you to do this work? Who is this other fellow"?

"Well, you see, boss, it's lak dis: I hired him to do de work at a dollar a day."

"But that's all I said I'd give you. How do you make anything"?

"Well, boss, dat's a fac', but I has the fun o' bossin' him."

All this anecdotal prelude has nothing to do with the case in point, but it explains the desire in "darkies" to appear "big" before their friends, and why the Rainier branch at Chicago is without a demonstrating car. Manager A. M. Robbins didn't know that the colored porter he recently engaged had any ability as a driver and so had not given George carte blanche use of the cars in the garage. It may have been this fact that prompted George to give his colored friends an exhibition of his skill while Manager Robbins was asleep. A telegraph pole inconveniently stood in the way and it will cost $1,500 to repair the car. George has not been seen since the accident, so the police are looking for him.

Santa Barbara Club Elects Duncan.

At its annual meeting the Automobile Club of Santa Barbara, Cal., elected Titus Duncan president; W. L. Newton, vice-president; G. W. Bates, secretary, and John Marshall, treasurer.

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The Week's Patents.

868,737. Spark Plug. Frank J. Watt, Detroit, Mich., assignor of one-half to Roy E. Hardy, New York, N. Y. Filed March 28, 1904. Serial No. 200,323.

1. In a spark plug, the combination of an externally screw threaded bushing provided with a central bore reduced in diameter near its upper end to form a shoulder, an insulating plug of a diameter to pass partially through the reduced portion of the bore and formed with a shoulder intermediate its ends to oppose the shoulder on the bushing and with an axial bore of uniform diameter throughout its length, a packing ring interposed between the shoulders on the plug and bushing, a binding bolt forming an electrode extending axially throughout the bore of the plug, a head on the inner end of said bolt to engage the inner end of the plug, a sparking point secured to said head and extending laterally therefrom toward and within the inner face of the wall of the bushing, a nut on the bolt engaging the opposite end of the plug, an insulating cap having an opening for the passage of the bolt inclosing the outer end of the plug and seated upon the end of the bushing, a packing ring interposed between the cap and bushing, a washer bent to form a spring sleeved on the bolt in engagement with the cap, and a nut and binding nut to engage said washer and clamp the parts together.

868,786. Driving Appliance for Speed Meters. Ragnor Johnson, Worcester, Mass. Filed Nov. 9, 1906. Serial No. 342,751.

1. In a driving appliance for speed meters, the combination with the toothed crown wheel, of an outer flange applied in connection therewith, an encircling band, an inner flange applied in connection with the crown wheel and perforated, screws passing through said inner flange and into the spokes of the vehicle wheel, and bearing blocks through which the screws pass, said blocks being interposed between the flange of the crown wheel and the spokes, substantially as shown.

868,797. Transmission Mechanism. Geo. D. Munsing, New York, N. Y. Filed April 23, 1907. Serial No. 369,787.

1. The combination with two shafts and a gear wheel on each of them, of planet gearing between the gear wheels, a clutch member movable in unison with the planet gearing, a co-operating clutch member and means to frictionally lock the parts of the mechanism against relative rotation.

868,806. Electric Motor. Oscar H. Pieper and Alphonse F. Pieper, Rochester, N. Y. Filed Nov. 25, 1905. Serial No. 289,140.

1. In a controlling device for an electric motor, the combination with an armature shaft and contact plates mounted thereon, of a movable contact member normally connecting said plates, a tension device attached to said member and movable in a direction transversely of the armature shaft, and a member movable longitudinally of the shaft and co-operating with the tension device, means for operating it and a motor circuit leading to the contact plates.

868,834. Explosive Engine. William K. Bassford, Perth Amboy, N. J., assignor to Vapor Gas Engine Manufacturing Company, Perth Amboy, N. J., a Corporation of New Jersey. Filed Jan. 22, 1906. Serial No. 297,339.

1. In a gas engine, the combination with a cylinder, a supply and exhaust, of means for heating the supply by the exhaust, and automatic means controlled by the temperature of the supply adjacent the point of its admission to the engine for governing the heat of the supply.

868,839. Hydrocarbon Engine. Jan Brons and Nanno Timmer, near Delfzyl, Netherlands. Filed July 1, 1904. Serial No. 214,927.

1. In a four stroke cycle hydrocarbon engine, the combination with a spring-pressed inlet valve for liquid combustible, of a shallow box beneath and surrounding said spring pressed inlet valve within the cylinder and provided along its periphery with a plurality of holes at a small height above its bottom, it being adapted to contain up to its holes the quantity of liquid combustible required for a cycle.

868,851. Machine for Propelling Plows or Other Agricultural Implements. Emil Erixon, New York, N. Y. Filed Nov. 19, 1906. Serial No. 344,168.

1. A machine of the character described comprising a frame, a motor, a chain operated by said motor and provided with rollers arranged to bear upon said frame, and a plurality of foot pieces carried by said chain, said foot pieces being connected to said chain in such manner as to permit independent movement of said pieces relative to the chain.

868,907. Automobile Locking Mechanism. John F. Coltman, Chicago, Ill. Filed Sept. 22, 1906. Serial No. 335,709.

1. The combination, with a lever, a lever guide, a lock casing secured to the guide so as to have its face flush with the side of the guide, a spring actuated bolt mounted in said casing and arranged to move transversely of the plane of movement of the lever, said lever having an opening therethrough to receive the bolt and a plate arranged opposite the lock and at a distance therefrom equal to the thickness of the lever.

868,935. Speed Changing Mechanism. George D. Munsing, New York, N. Y. Filed May 23, 1907. Serial No. 375,324.

1. In a speed changing mechanism, the combination with driving and driven shafts; of gearing between the two shafts, a cylinder, and a rotary piston therein to control the rotation of the gearing.

868,939. Pneumatic Pump. Hadley C. Reames, Los Angeles, Cal., assignor of one-half to George H. Reames, Los Angeles, Cal. Filed Sept. 20, 1906. Serial No. 335,340.

1. A pneumatic pumping mechanism for a vehicle tire, comprising a cylinder rigidly secured to the rim of the vehicle wheel; an air inlet valve operatively mounted in the outer end of said cylinder and in communication with the tire on said wheel; a piston in said cylinder provided with a piston rod; means attached to the frame of said vehicle adapted to reciprocate said piston rod upon the rotation of the vehicle wheel; an auxiliary cylinder secured to said first named cylinder having an open port in communication with the tire on said wheel; a spring pressed piston in said auxiliary cylinder adapted to be moved inwardly against the spring pressure by the air pressure in said tire; and a spring catch mounted in said auxiliary cylinder adapted to be pressed into the first named cylinder by the inward movement of the piston in said auxiliary cylinder.

869,021. Internal Combustion Engine. Odin Roberts, Dedham, Mass. Filed Sept. 9, 1905. Serial No. 277,676.

1. In an internal combustion engine, an assemblage of opposed cylinders with balanced parts, means to eliminate from operation successive balanced portions of the assemblage cumulatively leaving the active residue in balance, and means to vary the operation of said alternating devices to change the location of the active residue in the assemblage.

869,025. Metal Vehicle Body. Hinsdale Smith and Arthur P. Smith, Springfield, Mass. Filed April 2, 1907. Serial No. 365,902.

1. In a vehicle body, the seat portion of the same having a bead formed therein, a bow-piece secured to the body portion and at the rear side of the seat portion of the body; said bow-piece being of different material than the body portion whereby the unholstering material can be readily attached thereto.

869,058. Speed Changing Device. John G. Callan, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed June 6, 1904. Serial No. 211,243.

1. In combination, a shaft, a support, a member secured to said support and angularly adjustable with respect thereto about said shaft as a center, a rotating member carried by the first mentioned member and eccentrically mounted with respect to said shaft, and a speed changing driving connection between said shaft and said member.

869,061. Supporting Frame for Canopies, Awnings, etc. Roy A. Cox, Elwood, Neb. Filed May 13, 1907. Serial No. 373,453.

1. A supporting frame for awnings, canopies and covers comprising a pair of L-shaped members, a pair of angle members adjustably connected to said L-shaped members, a U-shaped member adjustably connected to the angle-shaped members, and supporting arms secured to said angle-shaped members and said U-shaped member.

869,109. Motor. James Thomson and Ernest Schwamberger, Pittsburg, Pa. Filed Feb. 16, 1905. Serial No. 245,974.

A device of the class described, comprising a cylindrical casing internally threaded at one end and reduced at the other end with a bearing in the reduced portion and with discharge ports at the juncture of the reduced portion and the body of the casing, an externally threaded annular member engaging the threaded portion of the casing, and with a plurality of angular recesses in its periphery and transversely of its threads, said annular member having a projecting annular sleeve internally threaded, a collar having means at one end for connecting to the source of power and with a threaded portion at the other end engaging the threaded portion of said casing exteriorly of said annular member and with a central shaft step externally threaded and engaging the threaded sleeve of the annular member, a shaft mounted for rotation through the bearing at the reduced end of said casing and supported in said step at the other end, and a water wheel having spaced peripheral blades and connected to said shaft adjacent to said annular member.

869,143. Transmission Gearing. Ross M. G. Phillips, Los Angeles, Cal. Filed Dec. 28, 1905. Serial No. 293,605.

1. A driven element, a plurality of oscillatory power transmitters for driving said element, a power shaft, a plurality of ec-

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centrics on the power shaft, means operated by the eccentrics for driving said oscillatory power transmitters, and means comprising a rack having inclined teeth slidable on the power shaft for shifting said eccentrics radially of the power shaft while the power shaft is rotating.

869,171. Valve. Claud H. Foster, Cleveland, Ohio. Filed Oct. 1, 1906. Serial No. 336,956.

1. The combination, with the exhaust pipe of an explosive engine, of a valve casing or tee in said pipe, and a rotary valve body in said tee or casing having an inlet port and an outlet port, the wall of said valve body being provided with cutting edges adjacent said ports, and a removable stop for limiting the rotation of said body, substantially as specified.

869,172. Means for Heating Automobiles and the like. Claud H. Foster, Cleveland, Ohio. Filed Dec. 26, 1906. Serial No. 349,-398.

1. The combination of an engine, an exhaust pipe therefor, a muffler, a heater, an inlet pipe or connection extending between said heater and said exhaust pipe, an outlet pipe or connection establishing communication between said heater and the muffler, and a valve at the junction of the inlet pipe or connection and the exhaust pipe, said valve having an outlet port adapted to register either partly or wholly with said inlet pipe and the portion of the exhaust pipe leading to the muffler and having an elongated inlet port adapted to register continually with the portion of the pipe extending toward the engine while the outlet port is in communication with either or both of its pipes, substantially as specified.

869,193. Flexible Wheel for Motor and Other Vehicles. Henry F. Nichols, Adelaide, South Australia, Australia. Filed April 20, 1906. Serial No. 312,803.

1. In a flexible wheel for motor and other vehicles, an outer flexible rim or tire comprising a number of blocks or sections and an encircling band of flexible material such as rubber, an inner rigid rim connected to the hub by spokes, a series of plate springs corresponding in number to the sections of the outer rim and set tangentially to the rim, one end of each spring being secured to the inner rim and the other end free, the central portion being secured to the middle of a section, and detachable flanges or check plates secured to the inner rim and overlapping a portion of the outer flexible rim, all substantially as described and for the purpose set forth.

869,198. Nut Lock. Jesse F. Sandbock, Jacob W. Noble, and Lee O'Dell, Tylersburg, Pa.; said Noble assignor to said Sandrock and said O'Dell. Filed Feb. 18, 1907. Serial No. 357,875.

1. In a nut-lock, a bolt, superposed nut sections thereon, the contiguous surfaces of said sections having recesses, and one of said recesses communicating with the bolt hole of the respective section, and the other recess having a cam-shaped wall, and a dog pivotally mounted in the first mentioned recess, and engageable by its cam-shaped wall for moving the dog into and out of engagement with the bolt.

869, 208. Electric Ignition of Explosives. Oliver J. Lodge and Alexander M. Lodge, Birmingham, England. Filed April 10, 1903. Serial No. 152,028.

1. In a system of spark ignition, apparatus for firing a combustible mixture, comprising in combination, a low tension circuit, a source of current in said circuit, an interrupter in said circuit, a high tension circuit inductively arranged with relation to said low tension circuit, a spark gap in said high tension circuit, condensing means placed in said high tension circuit and adapted to discharge across said spark gap, a sparking plug forming a secondary spark gap disposed within the combustible mixture, means connecting said spark gas to the condensing means, and a connection normally keeping said sparking plug at the same potential, as and for the purposes described.

869,217. Roller Bearing. Franklin Stratton, Providence, R. I. Filed Dec. 10, 1906. Serial No. 347,173.

1. A roller bearing comprising an annular series of rollers having gudgeons at opposite ends, connected supports at opposite ends of said rollers having sockets to receive the ends of said rollers and apertures to receive said gudgeons.

869,260. Vehicle Body. Henry H. Porter, Jr., Chicago, Ill. Filed Feb. 14, 1905. Serial No. 245,561.

1. A vehicle body having a front seat, a compartment located behind said seat and an adjustable partition dividing the compartment into two sections, and provided with seats upon its oppositely disposed faces, substantially as described.

869,494. Change Speed Gear. Charles B. King, Detroit, Mich. Filed Sept. 12, 1904. Serial No. 224,057. Renewed March 30, 1907. Serial No. 365,601.

1. A part adapted to have a linear and an angular movement, in combination with other parts constituting together a speed change gear, said movable part being arranged to connect the parts of the mechanism for the different speeds in one direction by a linear movement, and for a speed in the other direction by its angular movement.

869,577. Radiator. Victor Lacing, St. Louis, Mo. Filed Feb. 19, 1907. Serial No. 358,303.

1. A device of the class described comprising a plurality of coils formed of bent sheets, the bends acting as strengthening ribs, walls supporting the ends of said coils, a casing located on each end and secured to the walls, said casings provided with passages for directing the circulation of the water, and stiffening frames connected to the edges of the coils and supported by the walls, substantially as specified.

869,583. Spring Suspension for Vehicles. Walter W. Macfarren, Pittsburg, Pa., assignor to William H. Donner, Pittsburg, Pa. Filed May 28, 1906. Serial No. 319,-126.

1. In a vehicle, the combination of a body or frame, main springs supporting same, and supplemental balancing springs adapted to carry a portion of the load.

869,601. Ignition System for Explosion Engines. Richard Varley, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed April 5, 1907. Serial No. 366,462.

1. In an ignition system for explosion engines, a single circuit controller permanently connected to the primary circuits of a plurality of induction coils, a dynamo circuit including a kick-off, a battery circuit including segments, and a switch for completing either of said last named circuits through said circuit controller and its permanently connected coils.

869,675. Gasolene Carburetter. Alexander Winton, Cleveland, Ohio. Filed Nov. 10, 1904. Serial No. 232,167.

1. An improved carburetter, comprising a mixing chamber, gasolene and air inlet passages in communication therewith, the air inlet passage having an annular member therein constructed to form a main air passage way therearound, auxiliary passageways in communication with the interior of the annular member, and a member normally obstructing the passing of air through the auxiliary passage and adapted to be moved away from said passages under the influence of the engine, for the purpose described.

869,713. Clutch Mechanism. Peter Jenness, Philadelphia, Pa. Filed Sept. 12, 1905. Serial No. 278,075.

1. In a friction clutch, a driving member, a driven member normally held in engagement therewith, endwise compressible yielding means for holding said members in engagement, and a single endwise compressible yielding means coaxial with the shafts of said members for moderating the initial engagement thereof, said yielding means being continuously opposed to each other and both acting to set the clutch.

869,865. Spark Plug. Alfred Holsten, New York, N. Y. Filed Dec, 2, 1904. Serial No. 235,143.

1. A spark plug comprising a socket member, a contact electrode thereon, an insulated member arranged within said plug and adapted for reciprocation therein, oppositely closing valves arranged upon said insulated member, and a contact electrode carried by said insulated member, substantially as specified.

869,881. Motor Vehicle Running Gear. David M. Dearing, Jackson, Mich. Filed July 23, 1906. Serial No. 327,421.

1. A vehicle running gear frame comprising forwardly converging, flanged end beams, longitudinally and transversely extending intermediate bars, said beams being connected together and to said bars by angle plates secured to the inner faces of their webs between their upper and lower flanges, and cushioning devices for suspending said frame from front and rear axles.

869,882. Variable Speed Power Transmission Device. David M. Dearing, Jackson, Mich., assignor of one-half to Louis F. Boos, Jackson, Mich. Filed Feb. 19, 1906. Serial No. 301,891. Renewed April 1, 1907. Serial No. 365,857.

1. In a device of the character described, a driving member having a bevel toothed working surface and a flat peripheral working surface, a driven member having opposing flat working surfaces to coact with the peripheral surface on said driving member and a bevel toother working surface adjacent to the center of one of said flat surfaces to coact with the toothed surface upon said driving member, and means for varying the relative positions of said members for the purpose set forth.

869,887. Internal Combustion Engine. James F. Duryea, Springfield, Mass. Filed Jan. 19, 1907. Serial No. 353,118.

1. In an internal combustion engine of the class described, a base portion, a camshaft and commutator shaft mounted therein and having means for driving one from the other, a yoke-shaped piece carried by the engine casing, a pump casing removably secured thereto, a pump located therein, the shaft thereof having a clutch connection with the commutator shaft whereby when the pump casing is removed the pump shaft

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is disengaged from the commutator shaft.

869,968. Spring Suspension for Automobiles. Edwin J. Jenness, Chicago, Ill. Filed Jan. 18, 1906. Serial No. 296,701.

1. A spring suspension for vehicles comprising, in combination, a supporting spring connected at one end to the body of the vehicle and at an intermediate point connected to the running gear, a lever pivoted at an intermediate point to the body of the vehicle and at one end connected with the opposite end of said supporting spring, a second spring secured to the vehicle, and means carried by the other end of said lever and projecting vertically upwards to engage said second spring, whereby the downward movement of said other end of the lever is opposed by the action of said second spring.

869,994. Steering Mechanism for Automobiles. Ralph P. Thompson and Emil Koeb, Springfield, Ohio. Filed Oct. 16, 1905. Serial No. 282,892.

1. In an automobile, the combination, with a main frame and an axle provided with pivoted steering ground wheels and spring connected to the main frame so as to be movable relatively thereto, of a supporting plate rigidly secured to said axle, a worm gear segment pivoted to said supporting plate and operatively connected with the steering ground wheels, a worm carried by said supporting plate and meshing with said worm gear segment, and a controlling device supported on the main frame and operatively connected with said worm, substantially as described.

870,013. Vehicle Tire. Alton W. Butler, Brockton, Mass. Filed Dec. 8, 1906. Serial No. 346,839.

1. A wheel having an annular flanged bracket secured to each side of the rim, a flange on each of said brackets extending laterally away from the side of the rim, a series of coil springs seated on said flanges and secured thereon, each coil spring having an arm which extends transversely of the face of the rim at some distance radially outward from the rim and a tread portion seated upon and secured to said spring arms.

870,052. Carburetter. George M. Schebler, Indianapolis, Ind. Filed Sept. 21, 1906. Serial No. 335,621.

1. In a carburetter, the combination, with a fuel container having a discharge outlet, of a fuel valve, and air passage communicating with said outlet, a throttle valve for controlling the flow through said passage, and intermediate connections between said throttle valve and fuel valve whereby operation of the throttle valve will automatically shift the fuel valve, and means for so adjusting the connections between the throttle valve and fuel valve that the effect of movement of the throttle, valve on the fuel valve may be independently varied at different points of adjustment of the throttle valve.

870,065. Gas Engine. Allie R. Welch and Fred S. Welch, Pontiac. Mich. Filed May 29, 1905. Serial No. 262,780.

In a gas engine, the combination of a cylinder having an interior wall at its head end in the approximate shape of a portion of the surface of a sphere, an inlet and an exhaust valve forming parts of said wall when closed, each of said valves being provided with a stem extending at right angles thereto, one of said valves being located upon one side of said axis and the other upon the other side thereof, a shaft adapted to be actuated by the engine, said shaft being located upon the head of said cylinder adjacent, and approximately at right angles, to the axis of said cylinder, a single cam upon said shaft, and levers pivoted upon said cylinder and adapted to contact the valve stems and to be contacted by said cam to secure the proper timing and operation of said valves.

870,107. Transmission Gear. Emil Koeb, Leipsic, Ohio, assignor of one-half to Ralph P. Thompson, Springfield, Ohio. Filed Sept. 10, 1906. Serial No. 333,879.

1. In a device of the character described, the combination, with a driven shaft and high and low speed gears carried thereby, of a driving shaft extending parallel to said driven shaft, a gear rotatably mounted on said driving shaft and having inner and outer teeth, the outer teeth of said rotatable gear being permanently in mesh with said high speed gear, a pinion slidably mounted on said driving shaft and rotating therewith and adapted to engage either the inner teeth of said rotatable gear or to engage said low speed gear, and means for shifting said pinion, substantially as described.

870,171. Spring Cushioned Automobile Wheel. Walter A. Hill, Callicoon, N. Y., assignor of one-half to Valentine Scheidell and Guernsey Meyers, Callicoon, N. Y. Filed Jan. 2, 1907. Serial No. 350,392.

1. The combination of a wheel, of a body section, the rim portion of which is provided with a plurality of openings, independent compression springs arranged within the openings, said springs being arranged in an annular series, blocks at the end of the springs, said blocks projecting beyond the sides of the body section, and a tire section having openings, the end walls of which form wedges for engagement with the projecting blocks to thereby compress the springs in successive order during the rotation of the wheel.

870,183. Transmission Gearing. Elihu B Kent, Lansing, Mich. Filed Oct. 25, 1906. Serial No. 340,597.

1. In a transmission gear, the combination with a pair of engines including shafts and wheels, of a friction disc interposed between said shafts, means for connecting one or both of said shafts to the friction disc, two counter shafts, a friction gear on each counter shaft located each side the friction disc, an eccentric bearing for each counter shaft, means for simultaneously turning the eccentric bearings to cause the friction gears to engage opposite sides of the friction disc or to engage the two fly wheels, tnarsmission friction gears on the counter shaft, and a pinion on one of said counter shafts.

870,189. Brake for Power Driven Vehicles. Joseph N. Mahoney, Brooklyn, N. Y., assignor to himself, and James D. Leys and Samuel Jacobson, New York, N. Y. Filed Oct. 30, 1905. Serial No. 284,986.

1. In vehicle brake mechanism, the combination of a brake spring under tension tending to apply the brakes, a motor acting to impose further tension upon the spring to partially or wholly hold the brakes out of operation, retaining devices automatically acting while the motor is energized and after its circuit is opened to retain any such further tension of the spring, means for automatically opening the circuit of the motor when the brakes have been drawn to release position, a brake staff and operative mechanical connections between the staff and the retaining devices whereby the latter may be operated to abruptly or gradually release the increased tension of the spring to effect abrupt or variable application of the brakes.

870,228. Emergency Brake for Automobiles. Herman F. Dietz, Liverpool, N. Y., assignor of one-half to Anthony Will, Syracuse, N. Y. Filed May 16, 1906. Serial No. 317,051.

1. A vehicle brake, a support, a flexible connection carried by said support, and clamping means carried by the flexible connection adapted to engage the wheel of the vehicle and draw said flexible connection thereunder.

870,248. Pneumatic Tire. Harry A. Palmer, Akron, Ohio. Filed April 5, 1906. Serial No. 310,084.

1. The combination in a wheel rim for pneumatic tires, of a metal tire having one edge thereof cut away, pointed studs in the cut-away edge of the tire, and a flange adapted to clamp the inner edge of the tire sheath against the cut-away edge of the tire and the pointed studs therein, substantially as set forth.

970,258. Driving Mechanism for Automobiles. Edward O. Sutton, Springfield, Mass. Filed Feb. 15, 1907. Serial No. 357,537.

1. A friction driving mechanism comprising a driving disc and means to rotate the same, a second disc in axial alignment therewith, said discs being located on opposite sides of an axle or shaft whose axis is at right angles to that of the discs; friction discs rotatably supported on the axle on opposite sides of the axis of the driving disc, and clutches on the axle arranged to engage either of the driven discs at will, said clutches having a sliding movement on the axle and being rotatable therewith, together with means to move the driven discs radially of the driving discs, the clutches and the driven discs being capable of movement in opposite directions as a unit.

870,263. Clutch. William R. Warren, New York, N. Y. Filed March 7, 1906. Serial No. 304,724.

A clutch comprising the combination with a driving and a driven element, of a clutch member secured to one of said elements and provided with a pair of inclined seats having their walls at different degrees of flare or inclination, a clutch member slidably mounted upon the other of said elements and comprising two sections with differently inclined surfaces.

870,278. Cooling System for Automobile Engines. Jay N. Emley, New York, N. Y. Filed Feb. 17, 1906. Serial No. 301,528.

1. The combination of a vehicle frame having an engine compartment containing a water cooled engine, a radiator carried by said frame and outside said compartment, an air conduit leading from said radiator rearwardly of the vehicle, and means actuated by the engine for producing a draft of air through said radiator and conduit, said compartment having an opening whereby to permit air to be exhausted therefrom into said conduit, substantially as described.

870,287. Vehicle Construction. Charles J. Harris, Bridgeport, Conn. Filed Nov. 5, 1906. Serial No. 341,966.

1. An automobile having a body of the tonneau type and provided with a collapsible seat construction, the same comprising a seat bottom having a hinged back and a centrally hinged supporting rod, an underlying bracket adjacent the seat bottom and through which said rod passes, said bracket having diverging arms, one provided with a straight end and the other with a curved end, a socket at the floor of the body for receiving the lower portion of the supporting rod, a socket plate secured to a side member of the vehicle body, said socket

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plate comprising a curved socket and a straight ended arms of the bracket restraight socket in which the curved and spectively are removably secured and a spring pressed latching pin for retaining the straight ended arm in its socket.

870,369. Sparking Plug for Internal-Combustion Engines. Arthur E. Lamkin, Croydon, England. Filed Dec. 4, 1905. Serial No. 290,235.

In an electrical device of the class described, a sparking plug comprising a conductor insulated from said plug, said plug having a passageway terminating at one end in a chamber, a nut secured in said chamber and having an opening therethrough, a non-return valve arranged within the opening in the nut, said nut further provided with holes for admitting air from the atmosphere within the said chamber, protective means covering said holes to exclude dust, and a tube forming a conductor mounted in the other end of the passageway and bent on itself to bring the bore of the tube in direct alignment with the first mentioned conductor.

870,549. Motor Vehicle. George P. Parks, Bedford, Ind., assignor, by direct and mesne assignments, to Postal Auto and Engine Company, Bedford, Ind. Filed Nov. 10, 1906. Serial No. 342,839.

1. In a motor vehicle, the combination of reach springs, an axle pivotally connected with the springs, means for and a condensing compartment, and means in the condensing compartment for directing the water of condensation along the partition for boiling the water to liberate the suspended gases therein.

870,502. Crank Shaft. Thomas J. Fay, New York, N. Y., and John M. Ellsowrth, Bernardsville, N. J. Filed April 8, 1907. Serial No. 367,025.

1. A crank shaft made up of a plurality of sections having surfaces facing each other, said surfaces being provided with oppositely disposed recesses and dowel buttons seated within said recesses but out of engagement with the bottoms thereof.

870,517. Automobile Rack. John A. Mason, Newton, Mass. Filed April 1, 1907. Serial No. 265,725.

1. A folding rack for automobiles and the like, comprising a skeleton frame of rigid material pivoted at its lower corners to projecting supports rigidly secured to the vehicle, the device having also depending supports connecting it to the seat-base, for the purpose set forth.

870,548. Tire Shoe. George Dentzeau, West New York, N. J. Filed Nov. 4, 1905. Serial No. 285,846.

1. In a vehicle wheel, the shoe, consisting of two halves, having serrated outer surfaces, and spoke sockets, means of holding the shells together at the bottom consisting of bolts and nuts, and means of hoidlng the outer edges.

870,602. Spring Wheel. Daniel Warner, Bronson, and Horace Kitchel, Coldwater, Mich., assignors to The American Auto Wheel Company, Coldwater, Mich., a Corporation. Filed Nov. 12, 1906. Serial No. 343,172.

1. In a spring wheel, the combination with a hub, of the inner spoke sections secured therein; a rim on the outer ends of said inner spoke sections; side plates secured to said rim, said side plates being provided with inwardly projecting annular flanges adapted to receive said rim; spring pockets on said side plates; screw caps for said pockets; spiral springs arranged in said pockets and retained therein by said pocket caps, the outer coils of the springs being adapted to fit the walls of the pockets; a felly; T-shaped outer spoke cestions, secured to said felly, the arms of said spokes being arranged in the inner coils of said springs; and guards of flexible material secured to said side plates and rim.

870,656. Detachable Tread for Pneumatic Tires. Charles B. Woodworth, Newton, Mass. Filed Dec. 12, 1906. Serial No. 347,438.

1. In a detachable tread for pneumatic tires, the tread portion; a wire substantially concentric therewith and adapted to extend entirely around the wheel, said wire being rendered expansible and contractible in the general direction of its length by its shape; and hooks connected with the tread portion and extending inward radially into engagement with the said wire, for the purpose set forth.

870,657. Traction Attachment for Vehicle Tires. Charles B. Woodworth, Newton, Mass. Filed April 9, 1907. Serial No. 367,272.

1. In a detachable traction attachment for vehicle tires, a series of sections adapted to extend across the periphery or tread portion of the tire and each consisting of a folded flexible strap with its ends secured together whereby loops are formed at the ends of the section on opposite sides of the tire, rings secured in said loops, and detachable links intermediate of and connecting said rings, for the purpose set forth.



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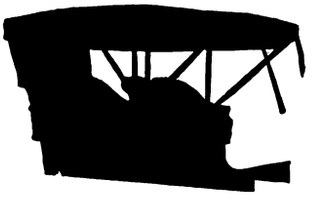
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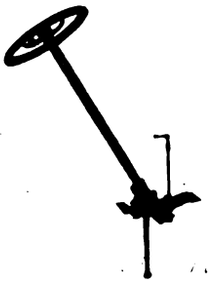
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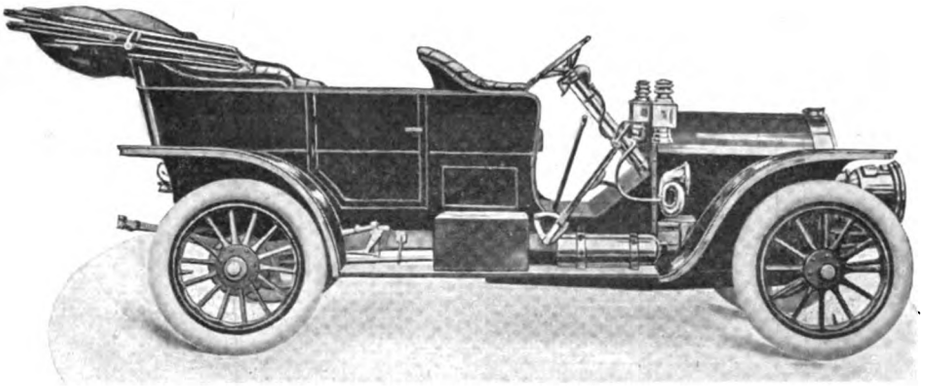
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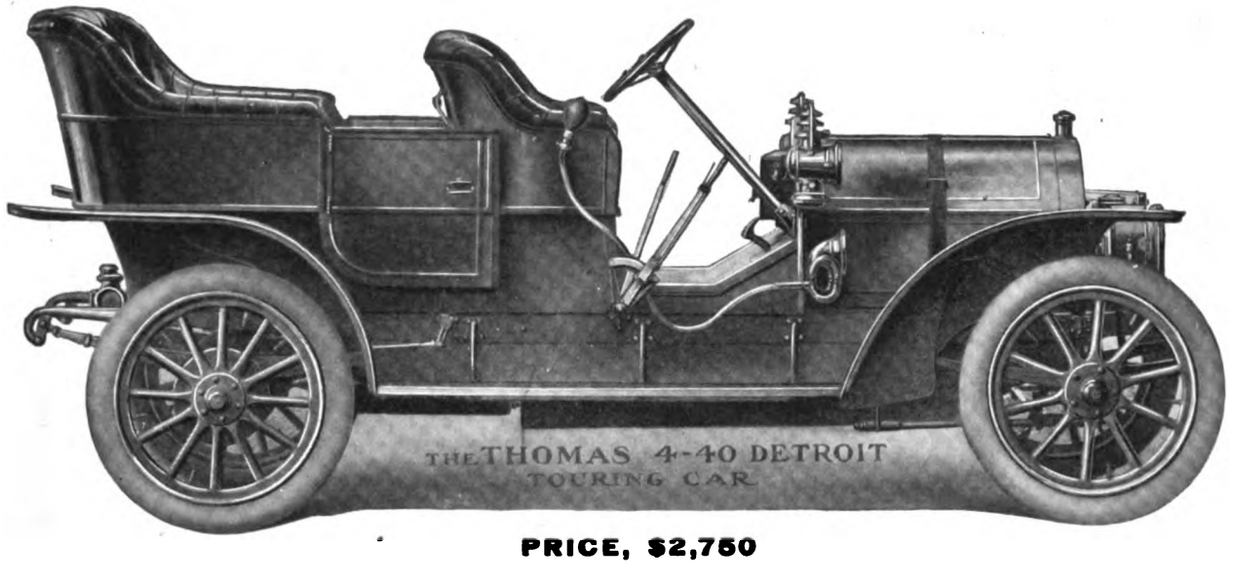
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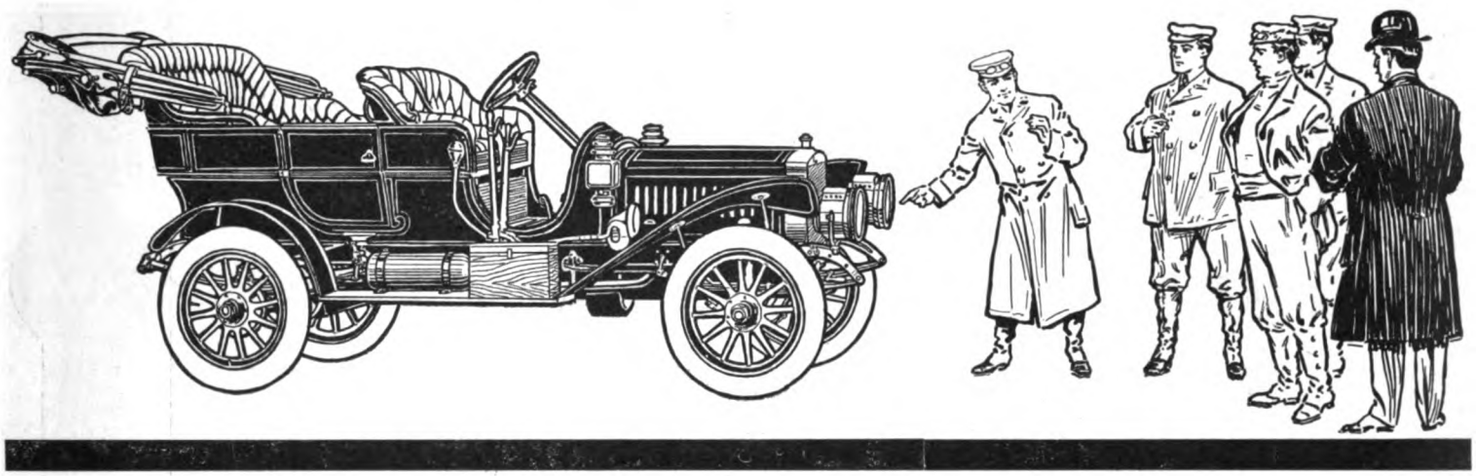
Thomas Cars Succeed

E. R. THOMAS MOTOR COMPANY

Member A. L. A. M. ***Buffalo.***

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What a Chauffeur Knows About Automobile Prices



THERE'S going to be a grand wakin' up some day soon on automobile prices. I'm next to the game and I *know,*" said a chauffeur.

He was proudly extolling the virtues of his car to his professional brothers.

"What's the use of paying from $3000 to $5000 for a motor car?—that's what I'd like to know.

"You've got to show *me* where you fellows' cars puts it over the Mitchell.

"*I've* driven your foreign cars that cost their owners $3000 duty *alone,* and I've driven *American* cars like *Johnson's* there and *Dorsen's* that set their bosses back $3000 and $5000.

"I've *lived* in cars like *them*—*slept* in 'em—driven 'em all day long—through rain storms and over roads that were *fierce.*

"I've babied 'em up hills that they absolutely refused to take on the high.

"I've taken 'em down and put 'em together in the garage.

"I *know* 'em—know 'em *all* from radiator to tail-light and if you fellows think you can *'show me'* just where your cars have got *The Mitchell* skinned, come out on the road with me and let's *see* if you can.

"The boss paid $2000 for *this* car. She's got four of the smoothest cylinders *you* ever saw and she's got *horse-power*—35—and she's done better on hills and under all road conditions than any 50 h. p. $5000 cars *I* ever saw, and I've driven 'em all and run up against *every test you can name.*

"*Your* bosses may like to pay $5000 for a car but *mine* was *wise.*

"You know there's a good *many* men in this country that shut their eyes tight on $2000 cars merely because they take it for granted that a $5000 car ought to be $3000 *better.* It *ought* to be all right—but *is* it?

"I want the chauffeur that *thinks* his car is $3000 better than the Mitchell to *prove up* with me—in *speed* or *power* or *hill climbing* or *any* old thing he thinks he's *better* at—*that's* all.

"*Yes* sir, if a man's in doubt about the *car* he wants, let him do what my *boss* did—make a 50 or a 500-mile *test* in a *Mitchell.*

"Any agent will take him out if he's interested in gettin' a car.

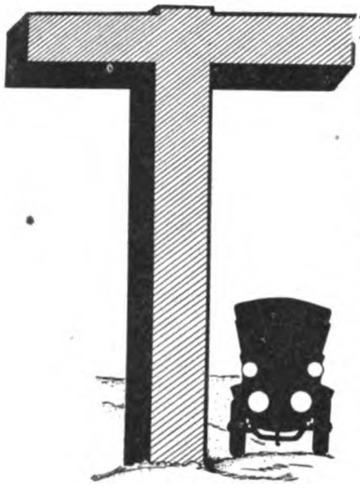
"That'll 'show him' what it showed my boss—and save him about $3000.

"Beg pardon, sir? Why, yes sir, write to the Mitchell Motor Car Company, 278 Mitchell St., Racine, Wis., and send 10c. for Art Catalog.

"Well, any of you fellows comin' out? I've got ten dollars in my pocket that says The Mitchell ain't $3000 behind *anybody's* car."

Member American Motor Car Manufacturers' Association.

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THERE ARE TWO

Kinds of Automobile Lamps

Solar and the Other Kind.

Those motor car manufacturers who use the Solar *know that* they are bringing their products up to the highest possible point as regards lighting equipment. On all the best *cars* you will find the best lamps—Solar Lamps. *Specify Solar Lamps and Generators* and they will be furnished. There are two kinds of Lamps—*Solar* and the Other Kind. Why not the best?

Booklet 6 sent upon application.

Badger Brass Manufacturing Co.
TWO FACTORIES
Kenosha, Wis. **436 Eleventh Ave., New York City**

Doesn't It Seem Reasonable to Believe

that the motorists who stick to

Morgan & Wright Tires

season after season must get a superior grade of tire service, else they would prefer some one of the other numerous brands? Fact is, that most of these "stickers to good tires" were converted to them because of actual economy in maintenance cost.

MORGAN & WRIGHT
DETROIT

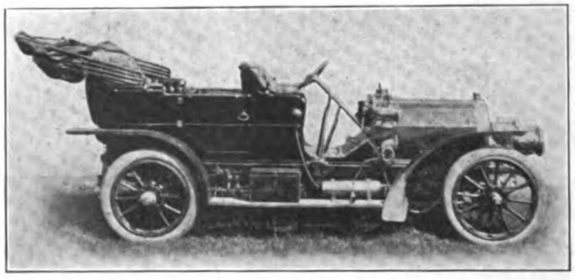
Branches, Agencies or Dealers Everywhere

THE BEST WAY TO FIND A GOOD THING IS TO LOOK FOR IT × WE HAVE A FIND IN THE AURORA RUNABOUT AT $700 AND $775. WILL YOU LOOK?

AURORA MOTOR WORKS
AURORA - ILL.

PENNSYLVANIA

Type "C" "50"



$2800 **With Magneto, $3000**

Touring Car, Roadster, Touring Roadster, Limousine.
Valve-in-head Motor, Chrome Nickel Steel, Annular Bearings.

Pennsylvania Auto Motor Co., Bryn Mawr, Pa.

PENNSYLVANIA DISTRIBUTORS.

Los Angeles, Cal.—Greer-Robbins Company, 1501-1505 South Main St.
San Francisco, Cal.—City Hall Automobile Company, 66 Fulton St.
Boston, Mass.—Frederick E. Randall Company, 245 Columbus Ave.
Chicago, Ill.—B. C. Hamilton, 1218-1220 Michigan Ave.
Providence, R. I.—Pennsylvania Motor Car Agency, 133 Washington St.
Denver, Col.—Denver Omnibus & Cab Company.
Kansas City, Mo.—Auto-Motor Company, 1122-1124 East 15th St.
Pittsburg, Pa.—Bellefield Motor Company, 4514-16-18 Henry St.
Brooklyn, N. Y.—Charles F. Batt, 1378 Bedford Ave.
New York City—Archer & Company, 1597 Broadway.
Spokane, Wash.—Dulmage-Rose Automobile Company, 1212 Second Ave.
Philadelphia, Pa.—West-Stillman Motor Car Company, 153 No. Broad St.
Baltimore, Md.—Rice's Garage, North & Madison Aves.
St. Louis, Mo.—Lakedel Automobile Company, 5143 Delmar Boulevard.
Buffalo, N. Y.—Brunn's Carriage Manufactory, 1140 Main St.

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CLEVELAND-CANTON SPRING CO.

MAKERS OF

SPRINGS

VANADIUM

1429 DUEBER AVENUE

CANTON, OHIO.

ESPECIALLY ADAPTED FOR AUTOMOBILE USE.

PERFECT FITTING — HEAT TREATED

The Battery WITHERBEE

THE HIGH POWERED CAR FEELS THE INDIGNITY OF BEING MADE TO CRAWL.

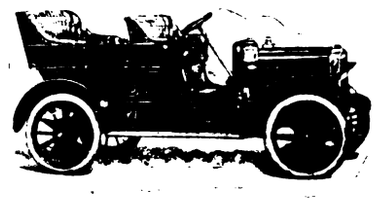
See that the WITHERBEE BATTERY is fitted to your car and take all the "limp" out of your engine.

The consistant performance of the battery Witherbee, has so standardized this product that it is included as part equipment on the greater majority of motor cars manufactured in this country.

In writing Department 20 for battery catalogue, please request Wico Spark Plug literature.

WITHERBEE IGNITER CO.,
Three Factories:
New York, 541 West 43d St.
Chicago, 1429 Michigan Ave.
Detroit, 220 Jefferson Ave.
Baltimore Office:
510 Continental Trust Bldg.

THE LEADER



MODEL D—24 H.P., 4-CYLINDER, $1,750.

IN ADVANCE OF ALL OTHERS—first in giving all-the-year-'round uninterrupted service, first in low cost of upkeep, first in being a profitable investment rather than a mere comfort, and yielding the highest returns—that is

The "Maxwell"

It no longer is necessary for me to count up the many exclusive Maxwell advantages—those who are using Maxwell cars, and there are now 9,728 of them, are our best salesmen. Ask one of them.

Whether your requirements call for a small car, or for a car of medium power and medium weight, or for an automobile of forty horse-power, your particular kind of vehicle is included in our line.

Whether you have set aside for your automobile purchase $825, $1,450, $1,750, or $3,000, we make just that car, for we are

Automobile Manufacturers to the American People

J. D. Maxwell is the foremost of American automobile designers. His name and the name of his car has become a household word with every American motorist.

Let me send to you the new Maxwell catalog, which is one of the few catalogs that really tell things. Let me give you the name of the Maxwell representative in your locality. He will be glad to give you a demonstration or refer you to Maxwell owners.

Benj. Briscoe President.

Maxwell-Briscoe Motor Company

Members A. M. C. M. A.

P. O. Box 106

Tarrytown, New York

FACTORIES:

Tarrytown, N. Y. — Pawtucket, R. I.
Chicago, Ill — Newcastle, Ind.

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New York: Maxwell-Briscoe, Inc., 317 West 59th St.
Chicago: Maxwell-Briscoe Chase Co., 1407 Michigan Ave.
Detroit: Maxwell-Briscoe McLeod Co., 243 Jefferson Ave.
Pittsburg, Pa.: Maxwell-Briscoe Pittsburg Co., 620 Maryland Ave.
Buffalo: Maxwell-Briscoe Buffalo Co., 26 Goodrich St.
Boston: Maxwell-Briscoe Boston Co., 121 Massachusetts Ave.
Los Angeles, Cal.: Maxwell-Briscoe Willcox Co., 1321 S. Main St.
Dallas, Tex.: Maxwell-Briscoe Hanley Co., 305 Commerce St.
San Francisco, Cal.: Maxwell-Briscoe Pacific Co., 440 Golden Gate Ave.
Kansas City, Mo.: Maxwell-Briscoe Automobile Co., 1616 Grand Ave.

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The Car of Steady Service

as applied to the

Rambler

is more than a mere phrase, it is a title earned through correct design and careful construction and proven by years of hard, constant service wherever power-driven vehicles are known.

The practical qualities that established the Rambler reputation are,—

1st—APPLIED POWER. By this we mean actual tractive force as applied to the road wheels. Owing to the straight line drive of the four-cylinder models and the direct chain drive in the two-cylinder cars, Ramblers have greater propelling force per pound than any other car on the market.

2d—DEPENDABILITY. Ramblers are built to stand the test of hard, daily service over the worst of American roads. This condition is not reached by mere weight and masses of metal, but by simple, scientific construction in which each element is stronger than the strains upon it can ever require.

3d—PRACTICAL ROAD VALUE. With the vast facilities of an enormous plant like the Rambler factory, skillfully directed to the production of two models only, greater value per dollar can be offered than is possible in a plant of lesser output.

In short, the Rambler is a car of

Power, Service and Value

Ordinary business policy dictates a careful examination of its many high qualities before ordering your new car.

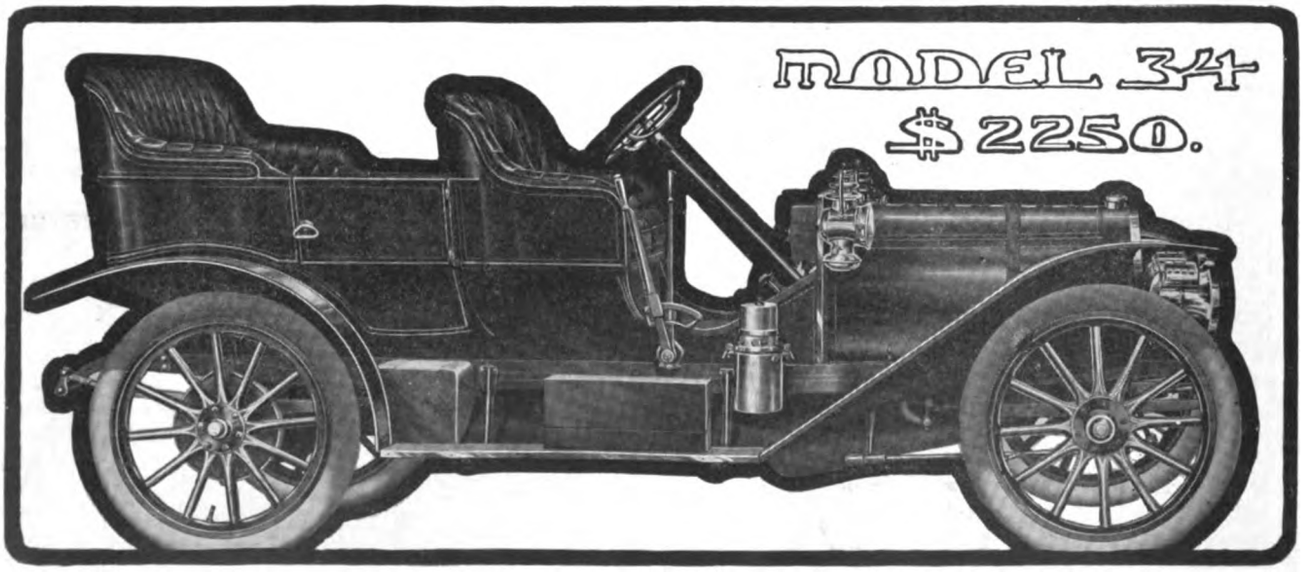
Our 1908 catalog fully describing two touring cars and a high-powered roadster is at your service: write to-day.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies

CHICAGO BOSTON MILWAUKEE PHILADELPHIA SAN FRANCISCO



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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, January 30, 1908. No. 18

ONE SECRET OF "BARGAINS" OUT

Revealed by Search for a Stolen Accumulator—But Owner Failed to Recover His Property.

A stolen ignition accumulator which in the course of events later turned up for sale at the Times Square Automobile Co.'s "bargain" establishment in New York, and which is causing a little three cornered excitement over its recovery, serves to emphasize the wisdom of owners and chauffeurs taking complete and detailed inventories of all the equipment and accessories of their cars against the time when they will find them gone to help replenish the stock of some second hand emporium.

On "Friday, the thirteenth," of December, a storage battery was taken from a car driven by Frank Taschelein, while the machine was standing in its berth overnight at the garage of the New York Motor Car Co., in West Fortieth street. How the theft was committed nobody can explain, since the garage management has watchmen on each floor both night and day, to protect its customers. Fortunately, Taschlein had a complete inventory of everything on his car, including the serial numbers on the tires, and by consulting his book was soon able to tell the manufacturer's number on the missing accumulator. After advising the New York Automobile Trade Association, the police, and the garage management as to the battery number, and urging a lookout for it, he set about on a still hunt of his own.

With the instinct of a true detective he made for the Times Square Automobile Co.'s place on Broadway. No great surprise overwhelmed him when he beheld the stolen battery displayed for sale on that concern's counter. Politely inquiring whether it was a second hand battery, and if so, to whom it had belonged, he says he was told that it had been in the car of a physician whom the clerk named as living in an uptown street. Less politely than before, Teschlein declared that the battery had been stolen from him, and to prove it he told them to call up the Trade Association, the garage and the police to confirm the identity of the number which he had given when the theft occurred.

"Well, it may be your battery, at that," he states he was told, "because we bought it from a kid," but there was no offer of relinquishing it.

After a wordy discussion Taschlein last week went to the detective bureau and got a police court summons against the Times Square outfit. Not wholly unprepared for such emergencies, however, the latter refused to respond to the summons, "on advice of counsel." The advice was good, since to swear out a warrant compelling their appearance and answer in police court would require the institution of "supplementary proceedings" to an action against the unknown thief, all of which would cost in the neighborhood of forty or fifty dollars while the battery itself is worth only about thirty-five dollars.

Taschlein's employer, not wishing to undertake litigation promising thus to exceed in cost the price of the battery, has not prosecuted the matter further, and the matter of replacing the accumulator has been put up to the garage people.

Makers to Meet at Detroit.

The annual meeting of the American Motor Car Manufacturer's Association is scheduled to be held in the Hotel Pontchartrain, Detroit, Mich., at 10 a. m., February 8th. Among other things, there will be an election of three members of the committee of management. It is also probable that the association's attitude toward future shows, which is a present cause for speculation, will be defined.

Parts Company Locates in Cleveland.

The Auto Parts Co., backed by W. B. Drown and William B. White, has opened for business in Cleveland. The company is located on Euclid avenue, near East Eighteenth street.

ALL READY FOR THE RETAILERS!

Their National Association is "Born"—Title Chosen, Manager Selected, Dues Fixed—Only Members Lacking.

If the National Retail Dealers Association does not "watch out," it will find its occupation gone. The "Association of Automobile Dealers of America" is on its scent. The N. R. D. A. was regularly organized by bona fide retailers during the Chicago show there in December last. The other "association" was not organized at all. It was simply born by the wave of a magic wand, in that house of magic on West Forty-second street, New York, styled the Spalding building, where only Alfred Reeves is an ordinary manager; practically every other man is a publicity promoter or "accelerator of automobile or public opinion," or a promoter, accelerator, organizer or magician of some sort, or very willing to be employed in such capacities.

The magicians who caused the "Association of Automobile Dealers of America" to arise from the hat are Charles A. Wardle and John R. Eustice. Until recently, Wardle was chief of the Association of Licensed Automobile Manufacturers' agency bureau. When he was relieved of those duties, the law of gravity attracted him to the Spalding building. He thought it a shame that all the knowledge and experience that he had acquired should go to waste and accordingly "got busy." He called Eustice to his aid, and together they outlined a national association of dealers, which shall require a manager and assistant manager, selected a name—and the manager—for it, and secured the indorsement of a number of friendly retailers. Eustice, who is a facile wielder of the pen, then heralded the news to the world.

"There is every possibility that the 2,000 retail automobile dealers in the United States will soon be enrolled in a national organization, with a wide sphere of useful-

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ness," he said. "While this interesting movement has just become known, the movement has been under way for some time and the plans are well advanced. Ten of the largest automobile dealers in this country located in as many big cities, make up the committee on organization.

"In organizing a national association the automobile dealers are following the lead of many other retail trades. The committee on organization has decided on the name "Association of Automobile Dealers of America," and has chosen as manager Charles A. Wardle, who is undoubtedly the best posted on the automobile trade, and well known to all dealers."

When "undoubtedly the best posted in the automobile trade" was sought for specific information, he was found in company with Mr. Eustice. Wardle seemed quite anxious that his history and qualifications should be known. He returned to that subject several times, among other things explaining that he had enjoyed "four years training under George H. Day, the best organizer the world had ever known."

Asked if the association had held any meetings, he answered in the negative, but added that "conferences" had been held in Chicago and New York, at which dealers from ten different cities were present."

Would the "A. A. D. A." conflict with the National Association of Retail Dealers, formed in Chicago? Although the latter organization formally chose its title and elected officers at the Chicago meeting, Wardle did not appear to think that anything of the sort had been done, or, if so, that it was merely an echo of an old association that had proved a failure.

Between them, Messrs. Wardle and Eustice, summarized the purposes of their organization about as follows:

To make serious efforts to find markets in various parts of the world for second hand cars, to be accomplished by advertising extensively in order to bring buyers and sellers together.

To interchange information relative to trade conditions, also statistics and general information of mutual advantage.

To look after traffic conditions, rates, cars, etc., in the interests of the dealers who are required to pay the freight.

To co-operate with the manufacturers to the end that they, the manufacturers, may have the support of a large, organized, widely distributed body working together as a unit—sort of an E Pluribus Unum.

To keep records of salesmen, chauffeurs, mechanics, washers, etc., for the information of its members, "so that a dealer in Philadelphia, for instance, may not have a car destroyed by a New York washer who poses as a mechanic."

To keep track of the shifting element of the industry so that the Kansas City retailer may know the character of the Boston chauffeur who applies for work.

The dues will be $25 a year. Two thousand dealers at $25 per year equals $50,000, quite sufficient to meet the requirements of any manager, however well posted.

Local trade associations are not to be antagonized, and though they will not be admitted to membership in the A. A. D. A. their members as individuals are eligible.

Wardle volunteered the information that he had already leased an office and had an option on two more rooms to provide for expansion.

The Week's Incorporations.

Peoria, Ill.—Thacker-Brereton Co., The, under Illinois laws, with $5,000 capital; to manufacture and deal in automobiles. Corporators—J. F. Thacker and J. T. Hunter.

New York City, N. Y.—Niagara Livery & Motor Car Co., under New York laws, with $5,000 capital. Corporators—William Burrows and Fanny E. Burrows, Astoria, N. Y.

Camden, N. J.—Rowe Motor Co., under New Jersey laws, with $100,000 capital; to manufacture and deal in automobiles. Corporators—John A. Riggins, Leon Berry and John M. Tobin.

Philadelphia, Pa.—Philadelphia Taxicab Co., under Pennsylvania laws, with $200,000 capital; to operate taxicabs. Corporators—L. T. Layton, secretary-treasurer, and Joseph Kleckner, president.

Dover, Del.—Schmidt Electric Motor Chair Co., under Delaware laws, with $500,000 capital. Corporators—I. W. Schmidt, New York City; C. B. Walter, Brooklyn, and W. I. N. Lofland, Dover.

Jersey City, N. J.—Rutherford Rubber Co., under New Jersey laws, with $300,000 capital; to make all kinds of rubber tires. Corporators—H. O. Coughlan, L. H. Gunther and J. R. Turner, Jersey City.

Newark, N. J.—Rotary Internal Combustion Motor Co., under New Jersey laws, with $200,000 capital, to make engines, power vehicles, etc. Corporators—J. Hokanson, M. Hoffmann, O. Anderson, and R. Baker, all of Newark.

Terre Haute, Ind.—Wabash Auto & Electric Co., under Indiana laws, with $10,000 capital; to deal in automobiles and conduct garage. Corporators—Frank S. Lewis, Alanson Hays, Virgil Pounds, Fred P. Giffel and Theodore P. Frank.

New York City, N. Y.—George V. Lyons Motor Co., under New York laws, with $3,000 capital. Corporators—Marie A. Lyons and George V. Lyons, 2384 Broadway; Andrew G. Dickson, Jr., 29 West Thirty-fourth street, New York City.

New York City, N. Y.—N. S. U. Motor Co., under New York laws, with $10,000 capital. Corporators—Gottlieb Banzhaf, Neckarsulm, Germany; Eugene Kircherer, 206 West Seventy-sixth street; Carl L. Schurz, 49 Wall street, New York City.

New York City, N. Y.—Hotchkiss Import Co., under New York laws, with $5,000 capital; to deal in automobiles. Corporators—James M. Bessey, 66 Broadway; Charles N. Foster, 34 New street, New York City, and John A. Breitbach, 1332A Fulton street, Brooklyn.

In the Retail World.

Renault Freres have opened a branch agency at 1549 Michigan avenue, Chicago. C. T. Ziegler is in charge.

W. L. Hibbard, president of the Hibbard Automobile Co., Milwaukee, has disposed of his interest in the concern and has retired. His successor has not been named.

A new brick and stone garage, 50x140 feet, will be erected by the Wabash Auto & Electric Co., of Terre Haute, Ind. When completed the concern will move from its present location at 925 Wabash avenue.

Fire caused a damage of $8,500 in the garage of the Johnson Automobile Supply Co., 4,390 Olive street, St. Louis, January 17th. The largest item was a $4,000 touring car belonging to the Sperry Mfg. Co.

Ground has been broken in Newark, N. J., for the new garage to be erected by J. W. Mason, at 350-352 Halsey street. The building, which will be two stories high, will be ready for occupancy by April 1st.

The Johnson Automobile Co. has opened a garage at 122-124 East Main street, Marshalltown, Iowa. W. W. Johnson, A. L. McKean, and George C. Shugart are named as the organizers. Ford and Mason cars will be handled.

Leigh, Neb., is real proud as it shortly will be able to boast of a garage, the only town of its size in the State to possess such a convenience. S. B. Hoelsey is remodeling the building adjoining the postoffice for the purpose.

The Bergdoll Motor Car Co., of Phildelphia, has acquired the large garage and property at the northeast corner of Broad and Wood streets, that city. The acquisition is in the nature of a transfer from Louis Bergdoll, who had bought the property.

Directors of the St. Louis Auto Exchange Supply Co., doing business at 3916 Washington avenue, St. Louis, have petitioned the circuit court to dissolve the company, as it cannot meet its obligations and is doing a losing business. The company was incorporated only about two months ago with $30,000 capital, by Charles J. Lewis, president; Fred N. Argo, secretary; J. E. Brennan, treasurer; Robert J. Thompson, H. P. Wells, Hugo Koch, and A. M. Work. The petition alleges that John W. Baker, who promoted the company did not pay $2,000 for stock which he subscribed.

New President for Kansas City Dealers.

H. E. Roodledge was elected president of the Kansas City Automobile Dealers' Association, at its annual meeting last week. The office has been vacant since the resignation of P. B. Doddridge. C. F. Ettwein was chosen vice-president, E. P. Moriarity secretary, and W. S. Hathaway and G. L. Walls directors.

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KNOX CREDITORS TO NAME OFFICERS

Appoint Nominating Committee to Choose Successors of Present Incumbents—Assignee Renders Report.

About 40 of the preferred stockholders attended the meeting of the Knox Automobile Co., Springfield, Mass., on Tuesday last, at which Assignee Mayo practically turned over the company to them for reorganization.

The stockholders, who became such by virtue of having accepted stock to the amount of their claims, did not, however, elect new officers as was anticipated. Instead, what is practically a nominating committee was appointed to decide whose resignations shall be accepted and to name their successors and the additional directors called for by the terms of reorganization. This committee is made up as follows:

Alfred N. Mayo, chairman; Robert W. Day, representing the Springfield National Bank; Edward Pynchon, representing the Chicopee National Bank; H. B. Stedman, representing the Hartford creditors; George A. Yule, representing the Western creditors. It is reported that the committee will advise the election of a new set of officials from top to bottom, with but one probable exception.

The report of Alfred N. Mayo as trustee of the company from July 22, 1907, up to January 25 last, which was rendered, showed that the receipts during that period had been $232,368.44, while the expenditures were $226,262,.51, leaving a cash balance of $6105,93.

The receipts were made up of the following items: Cash on hand July 22, 1907, $345.37; received sundry old accounts, $22,-721.31; sales of cars, $130,471.24; sales of parts, $48,362.49; deposits sales of cars, $3,800; loans (notes discounted), $25,000; rent, $783.34; miscellaneous, $884.69.

The expenditures were as follows: Preferred claims, $10,954.30; Greenwood Bros.' second claim, $7,000; fractional claims (creditors), $11,638.71; pay rolls, $103,009.20; account branch houses, $9,609.29; show expenses, $5,634.01; sales traveling expenses, $2,897.51; guarantee expenses, $834.61; advertising general, $2,189.61; insurance and water tax, $664.68; miscellaneous, $3,362.65; freight and drayage, $3,759.39; new materials, $64,705.55; cash on hand, $6,108.93.

Jeffery Adds to His Real Estate.

Within the past two weeks six more acres of ground, adjacent to the factory in Kenosha, have been purchased by Thomas B. Jeffery & Co. The ground area now measures one-half mile from east to west and one-half mile from north to south. The increased demand for the Rambler has made necessary the acquisition of more space for the enlargement of various departments and the addition of others.

O K Fails to Live up to Its Title.

The O K Machine Co., Buffalo, N. Y., makers of automobile specialties, was thrown into involuntary bankruptcy on Thursday last, W. L. Frye, secretary of the company, admitting its inability to meet its obligations. George D. Pine, Post & Lester, the Simmons Hardware Co., and the Dragon Automobile Co., were the petitioning creditors. Their claims total. $680.50.

Incorporates to Make Meteors.

The Meteor Motor Car Co., which makes the Meteor car at Bettendorf, near Moline, Ill., took out its papers last week, the capitalization being $50,000. Arno L. Petersen is named as president; Henry F. Petersen, vice-president, and F. W. Speers, secretary-treasurer. In addition to the officers the directors are C. N. Voss, J. H. Haas and Max D. Petersen.

Duplex Ready to Leave Roseland.

The Duplex Motor Car Co. has been formed in Roseland, a Chicago suburb, and already it is seeking a better location, several factory sites being in view. The officers of the company are: R. M. Hanson, of West Pullman, president; C. M. Hanson, Chicago, secretary; Ed. Torguerson, Roseland, treasurer. At present their shop is at 228 W. 111th street.

Midland Completes Its Organization.

Officers have been elected by the Midland Motor Co., Moline, Ill., as follows: President, C. H. Pope; vice-president, E. H. Guyer; treasurer, A. E. Montgomery; secretary and manager, H. E. Walton. The Midland company recently took over the plant and assets of the Deere-Clark company.

One More Big Garage on Broadway.

The Palmer & Singer Mfg. Co. are this week taking possession of their new building at 1620-1624 Broadway, New York, from which address the Simplex and three lines of Palmer & Singer cars will be marketed. It is one of the largest garages on Broadway, having accommodation for more than 150 cars.

Chapin En Route for the Coast.

Roy D. Chapin, general manager of the E. R. Thomas Detroit Co., has departed for a sweep of the country which will extend to the Pacific coast. As he has made the trip before, he is not visiting strangers or strange territory.

Draper Leaves Wayne for Mora.

J. S. Draper, for three years sales manager of the Wayne Automobile Co., Detroit, has resigned to accept a similar position with the Mora Motor Car Co., Newark, N. J. His change becomes effective February 1st.

"THE ROBBERS ARE ON THE RUN!"

New Haven Can Tell Who They Are—Dream of a Big Automobile Factory Fades Away.

Many New Haven business people think that the number implied in the advertising catch-phrase, "The Robbers are on the Run!" which has for some time appeared in local papers, should be changed to singular. They opine that it should read: "The Robber is on the Run!" Incidentally, the police of the Connecticut city are looking for one John E. Fulton, who with his son, Rufus, operated as the Connecticut Automobile Company.

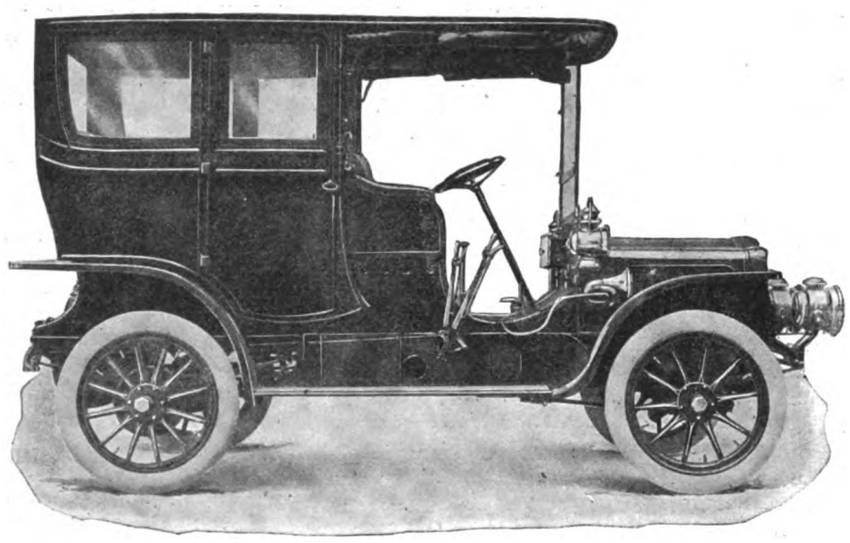
According to New Haven advices Fulton, who claims to be a descendant of the inventor of the first steamboat, came to that city about the first of October and stated that he was going to make three styles of automobiles, which would cost $350 each. He said the cars could be built for less than $250 and would be better than many machines costing over $2,000. As if to prove it he advertised under the catch line, "The Robbers are on the Run."

The first act of the Fultons upon arriving in New Haven was to take a ten years lease of the Armstrong factory in Congress avenue near Howard avenue. Fulton then called upon several contractors who he informed that he had the lease and that he had received it at a low figure with the understanding that he was to make all the repairs. Brainerd & Benson were given the contract to do the joiner work. Michael Rakieten was given the painting order, and E. C. Bedell was ordered to go ahead with the plumbing. Each was told that by the first of January 700 men would be employed making the machines. Work amounting to over $1,000 was done by these three concerns and they were told that they would be paid on January 9. As there was no money on that date, Brainerd & Benson attached the machinery at the plant and took it away. Deputy Sheriff Dejou acted. Acting for some of the employes, another deputy sheriff took ten roll top desks from the office, and another official removed the typewriters, which were said to be on lease.

Then some more of New Haven became interested in the affairs and they learned that in all the Connecticut Automobile Co. had employed fifteen men, but that not a single automobile had been turned out. Also that a lot of machinery that had been ordered lay in the freight house, waiting to be paid for before it could be delivered. Of the fifteen men employed, the engineer is said to be behind $80 in wages and a cabinet maker $100, and it is stated that even the elevator boy was not paid. There has been a steady stream of creditors to the place since the departure of the Fultons became generally known.

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BOSTON, 320 Newbury St.
CHICAGO, 240 Michigan Ave.
CLEVELAND, 407 Rockwell Ave.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, JANUARY 30, 1908

For the Integrity of Amateur Sport.

It is to be hoped that all other of the district associations of the Amateur Athletic Union and all other sports governing organizations—will follow the example of the Pacific Association of that body and appoint "automobile commissioners" to "keep tabs" on motorists who compete for cash or against professionals and who then seek to be accepted as amateurs in other sports.

Such action will be in the nature of serving the sport of automobiling a better turn than some of its own adherents will permit themselves to see. As at present constituted, it is too much a "trade game."

Although the superb indifference of most of the American Automobile Association's officials to all opinions and suggestions save those that emanate from the "inside" has been the means of alienating the support of not a few of their erstwhile upholders, it is possible that after a few score of the men who compete under A. A. A. rules receive their proper brand, that of "professional," and find the door of amateur sport slammed in their faces, the A. A. A. administration will not fly in the face of public sentiment and make a mockery of amateurism, which is but another definition for genuine sport.

If automobile competition is not sport, it is up to the A. A. A. properly to define its status. It is generally written of as sport and it certainly takes the form of public contests of either speed, skill or endurance, which are the elements that contribute to sport. The old idea that sportsmanship is measured solely by athletic prowess has been or is being rapidly dissipated. Whatever is classed as sport, regardless of the implements employed, begets sportsmen and the automobile competitor who is free from trade entanglements and who competes for sport's sake and not for advertising or the money an event may net, should welcome the action of the A. A. U. since it assures him his proper distinction—that of a genuine sportsman, which best is expressed by the term amateur.

It would seem that the American Automobile Association can well afford to take a stand for real sport by purging its rules of their present absurd inconsistencies, some of which were borrowed from abroad and the remainder inserted for the benefit of a few men of wealth.

Reform the Road Law!

Governor Hughes, in his message to the New York legislature, says:

"In making the large expenditure which is contemplated for improved highways the object is to execute a comprehensive plan in the interest of the whole State, furnishing through lines connecting centers of population and proper lateral lines to provide each section with adequate means of communication."

The Governor is quite right as to the object of spending the $50,000,000 to be gotten from the bond issue, but that object is not being attained under the present so-called Higbie-Armstrong law, under which boards of supervisors petition the State engineer for any road they want built. Sometimes this road goes from nowhere to nowhere; sometimes it is an isolated stretch of two or three miles; sometimes it is built parallel with another good road, and all because one or two persons have influence with the board of supervisors. It certainly seems unwise to go on spending money under the Higbie-Armstrong law instead of providing a system such as the Governor favors, which will connect the large centers of population and furnish proper lateral lines to provide each section with adequate means of communication.

The Higbie-Armstrong law has served its time. The small stretches of good road built under it were useful object lessons, but now the taxpayers should demand that good roads be built with system.

Town Cars and Taxicabs.

At present the attraction of the light weight, closed vehicle of the town type, is strong upon the makers, and with the development of taxicab services, and the exploitation of scores of companies to handle them, or that hope to handle them, there is at once a tendency to overdo the thing, and to branch out in the wrong direction. In the first place, the status of this type of vehicle is not as yet sufficiently well defined to warrant hasty judgment as to the legitimate demand for it. For another thing, experience in building pleasure cars is apt to breed over-confidence in constructing machines which, though nominally similar in many respects actually differ from them in the material point that they must serve in the rigorous capacity of commercial utensils.

As town cars, such machines must be light, moderately short in wheel base, nicely balanced as to suspension, handily contrived as to passenger accomodation, simple in construction, economical in maintenance, and as low in cost as is consistent with sound building and a rational profit between producer and consumer. Furthermore, they must have a motor possessing even torque, freedom from vibration and great power of acceleration. The latter requisite is most important, since it is to be presumed that such a vehicle is to be used almost exclusively in closely crowded traffic, where quick starts and quick stops are the only means of increasing its average rate of movement. Accelerative power, thus becomes tantamount to speed.

Another use, closely allied to that of the town car, yet sufficiently different from it to alter somewhat the requirements governing its construction, is that of the suburban car, which, unlike the "demi-route" of France, is designed to answer to all the practical purposes of the useful horse-drawn station wagon. Up to the present time only one or two makers in this coun-

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try have essayed the construction of such a machine.

A vehicle of this description, intended to take up work which is too limited to be economical for the large touring car, and too exacting to be longer fulfilled by the horse, must have general proportions similar to those of the town car, must have most of its excellencies, but requires less accelerative power, and more speed capabilities, though not necessarily high speed power. Unlike the typical town car, such a machine requires considerable road clearance, and must be made at sufficiently low cost to make its use attractive to the present owner of a large and powerful car as well as to the person of moderate means and an insistant need of safe and economical daily transportation over short distances.

Here are two types of vehicle, closely related in many respects, as regards ideal construction, yet differing somewhat in the nature of the service they are required to perform. For both there is a probable demand of considerable magnitude, and for both an equal chance of commercial error of the gravest nature in building for sale rather than for use, or in judging too lightly of the stern requirements of machines which are to be operated the year round independent of highway and weather conditions. The field is a most attractive and promising one, especially since the sober purpose involved relieves the maker from the necessity of attempting to set or follow fashions at all closely and opens the door to quantity production. Probably it is as big an opportunity in a subsidiary way as exists in the industry today. But it must be handled wisely and well, if the too alarming consequences are to be avoided.

How Chauffeurs May Help Themselves.

It long has been painfully apparent to any one coming into close contact with professional chauffeurs and giving ear to their complaints that they consider themselves to be a much abused class who are unpopular with the world at large, though for reasons beyond their ken.

A frequent topic for conversation, in the room set apart for their use in public garages, or when two or three are gathered under the shed provided for their protection at a road house, is the lack of consideration shown them by the police in charge of traffic who invariably compel them to turn around when they try to "beat the line" or travel on the wrong side of the thoroughfares.

Of course this is the veriest rot, though it is only the wail that is to be expected from a type of driver who by their actions and supercilious demeanor give the impression that they are of a favored class to whom the public and the law must give way.

If chauffeurs would free themselves from the bad name that is theirs and would try to deserve the tolerance of the public they could make a good beginning by considering the horn as a means of warning people of their approach rather than as instrument with which the frighten the public from their course. And at the same time a little thought for the horse struggling with a heavy load would prompt a man with the least claim to being human to give it the right of way rather than to "hog" a course which would compel the animal to come to a stand still.

These are only two incidents that are repeatedly coming under the direct observation of the public, and their correction or elimination would do much to make people feel a little more kindly toward the drivers of cars, and it may be that if chauffeurs were sincere in their desire to deserve a good name in the community a little thought would suggest to them that they are acting towards others in a way that they would not care to be acted toward if conditions were changed and they were to become the man in the street.

Making a Bad Beginning.

Why will men engineering a movement herald it to the world while it is yet "unfit for publication," so to speak?

The so-called Automobile Dealers' Association of America is a case in point. A live organization of the sort may be made to serve some excellent purposes, but when the promoters of it, who are not retail dealers, make it so abundantly plain that the chief inspiration of their efforts is the desire to provide fat jobs for themselves, how can they hope to escape criticism?

National associations are not drawn out of hats and the plan of selecting a name, "engaging" a manager—who, of course, is one of the promoters—and fixing the amount of dues before organization actually has been effected, is too suggestive of "stacking the cards" and "giving away the game" to deserve approbation, particularly when a bona fide association of the sort already is in existence.

COMING EVENTS

February 1-8, Providence, R. I.—Show in Providence State armory.

February 3-8, Kansas City, Mo.—Kansas City Automobile Dealers' Association's annual show in Convention Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory.

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association's show in Central armory.

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

February 22, Boston, Mass.—Bay State Automobile Association's 150 miles endurance run to Providence, Worcester and return.

February 24-29, Portland, Me.—Annual show in the Auditorium.

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

We have no doubt that the promoters of the retailers' association will consider criticism as distinctly bad treatment, but when there is a right way and a wrong way of doing things and they choose the latter, the fault rests with themselves.

The American Automobile Association has issued an appeal to all owners and users of automobiles, and to manufacturers and agents, asking for support of the Federal Registration Bill introduced at the present session of Congress by the Hon. William W. Cocks of New York, and known as House Bill No. 428. It is the measure designed to permit citizens of the United States to enter any State in the Union without payment of an "admission fee." The man who has wearied of being "held up" and who fails to write the Judiciary Committee of the House in support of the bill must blame himself if relief is not forthcoming.

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AMBASSADOR AT A. C. A. BANQUET

M. Jusserand Talks of French Triumphs, Hippogriffs and Dust Problems—Depew and Others Also Speak.

Thanks to M. Jules Jusserand, French ambassador, those overworked coinages, "whizz wagon," "benzine buggy," "gasolene goer," and the remainder of the tribe of "smart" definitions of the motor car may be laid on the shelf and given a long and much needed rest. At the annual banquet of the Automobile Club of America on Saturday evening last, 25th ult., M. Jusserand contributed an uncamphored and polite substitute for such terms. He styled the automobile "the modern hippogriff." The ambassador was the chief speaker of the occasion. It follows that the band played the "Marseillaise."

The banquet was the first held in the new club house on West Fifty-fourth street, New York. The dining hall was tastefully draped with flags and bunting, with the American and French National emblems intertwined. All the tables bore floral decorations and attractive souvenirs were at every plate. Every seat was occupied. Besides M. Jusserand, those at the guests' table were Senator Chauncey M. Depew, Gen. Nelson A. Miles, Gen. George Moore Smith, Col. John Jacob Astor, the Rev. Wilton Merle Smith, Patrick Francis Murphy, Henry Sandrum, Augustus Thomas, Dr. Schuyler Skaats Wheeler, Dave Hennen Morris, Job Hedges, Albert R. Shattuck, Charles Jerome Edwards and Oliver A. Qualye. Altogether, between three and four hundred persons were present.

President Colgate Hoyt acted as toastmaster and preliminary to his remarks proposed the health of the President of the United States and of the President of France. The toasts were drunk enthusiastically, while the band played the "Star Spangled Banner" and, for the first time, the "Marseillaise." Then Mr. Hoyt congratulated the club on the new home, paid a deserved tribute to the building committee, and said that it will have cost not far from $800,000. Of that debt $40,000 has been wiped out in the past year, thus reducing the mortgage obligation to $610,000. The club membership now is 1,511 as against 1,200 a year ago, and the waiting list is a long one.

When Mr. Hoyt introduced Ambassador Jusserand the orchestra again struck up the "Marseillaise." M. Jusserand, who was seated next to Senator Depew, replied to the toast, "France, the Mother of the Automobile."

Not unnaturally he sounded the trump of France and Frenchmen and spoke of radium, dirigible balloons, and the other good things they had discovered, and said the secret of his countrymen's success in building automobiles is that "they work slowly and with patient care—a national disposition fortified by custom."

"It was Nicholas Joseph Cugnot, an officer of the Engineer Corps, who built the first automobile in 1765," said the Ambassador. "That curious old machine still exists and may be seen to-day in the Conservatoire des Arts et Matiers in Paris. Its speed was three miles an hour and it had to stop every fifteen minutes to fill its boilers—but it moved. Cugnot died in poverty, neglected and forgotten, in 1804.

"The reinvented automobile has conquered more of the world than did Alexander the Great. You will find automobiles in Madagascar and in Senegal. It inspires passions. People have been known to dispose of their property to procure one. There is romance about it. Its possibilities are exhilarating.

"This modern hippogriff is king of the road, with a tendency, I fear, of becoming autocrat, too. There lies a serious danger. The pride of youth and success which shines in its glaring eyes must not lead it astray, and means must be found to pacify and befriend the slow walker, the antiquated wagon driver, the stay-at-home ground tiller, who constitute, after all, a majority. Certain means which have been unwittingly employed to silence such people should be carefully avoided.

"One of the most important problems nowadays, and one on which greatly depends the future popularity of the art, is the problem of dust. The art has no greater enemy than dust. Dust spoils the pleasure of all who use the road, spoils the machine, spoils the crops, and the growing animosity existing in certain provinces against automobilists has no greater cause. Certain it is that gardens and orchards bordering much frequented roads have lost all value, owing to the dust, which prevents the plants from breathing and kills them. I know of handsome villas now for sale because uninhabitable from the dust raised by the automobiles—for sale, but unsalable. The problem must be solved, dust must be done away with."

Senator Depew spoke to the toast "America," the User of the Automobile." He related some of the marvels of transportation that had happened during his life time of more than 70 years, dealt out some figures relating to the automobile industry, and to highway work, and spun a few humorous stories. He mildly advocated speedways "to protect the public and develop the industry," and on the subject of speed said:

"The last to take up the automobile have been railroad men. They are accustomed to expect roadbed, ties, rails, wheels and the machinery of the locomotive to be perfect for 20 miles an hour and upward. The automobilist does his forty or fifty upon an ordinary highway with only a rubber tire and a pneumatic tube between him and eternity. If he picks up a nail or his steering gear gives out the morning paper tells the rest and mourning friends lament his indiscretions.

"Stevenson, the great English engineer, was asked what the difference was in danger between fifty and a hundred miles an hour with the locomotive. He said, "None, because if you leave the track you will go to hell with either." The condition with Stevenson was that you must go off the track, but with the automobilist there are numberless conditions beside the tracks, therefore constant inspection of the machine, vigilance in its operation and proved intelligence in the driver are absolutely essential.

"On the health side I know from experience that the ozone which is driven into the lungs by riding in an open car at a fair speed is a specific cure for insomnia and nervous troubles. Sanity and level-headedness, together with healthy living, have come to those who have found it possible to live in the country and motor to their business places in the city and return to their homes."

"The Automobile and the Pedestrian," afforded a peg on which Augustus Thomas, the playwright, hung a succession of merry jests.

He complimented the French Ambassador and fell easily into speaking of Paris.

"A city," said Mr. Thomas, "where things are so very cheap that one may lead a double life for the same money."

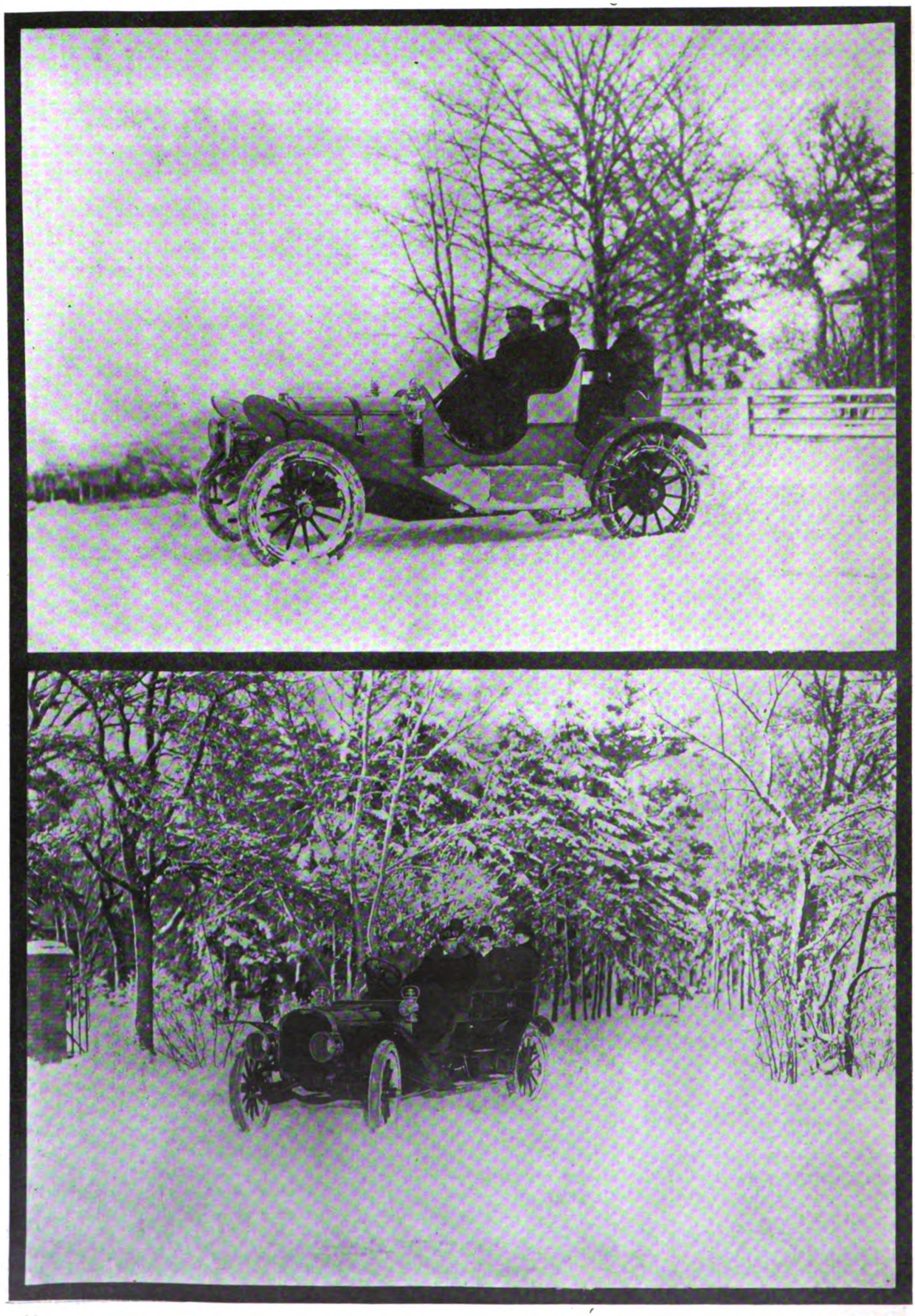
His experiences with automobiles had been, he said, entirely from the standpoint of a pedestrian. He had noticed, though, an extremely curious thing—the way sex is so clearly drawn in chickens when an automobile comes sailing down a road. An old rooster will stop with his head on one side, eye the devil wagon, remark calmly to himself, "Hell! I've seen them things before," and step dignifiedly out of the way. On the other hand a hen will squawk and shriek and scream and flutter her foolish wings and make a terrible to do, in the end, the chances are, getting herself run over.

The automobile plays a pretty important part on the stage nowadays, said Mr. Thomas. It used to be that the property man rigged up a machine of laths and a wheel to make noises which would indicate that "the carriage" was arriving and departing. Now it is a simple matter for the property man to squeeze a rubber bulb and convey the proper suggestion by a mere "honk! honk!" He added that he was the first playwright to use a suggestion of the automobile in the drama.

Mr. Thomas ended by saying that he had never advertised any particular brand of automobile, but that he had a new play coming out, and if some manufacturer would send him a late model—well, he didn't know. He was only human.

"Automobiles" was the toast assigned to Job E. Hedges, who as usual, poked fun at everything and everyone worth poking at. Job rapidly is becoming an almost indispensible adjunct of all New York banquets.

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Ramblering Through Winter Landscapes

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Motor Cars as Mediums for Municipal Graft

Part II, Wherein the Grafter Acquires a Fine Large Touring Car and the Pleasure of His Relatives and Friends is Correspondingly Increased at the Taxpayers' Expense—Car and Chauffeur Placed Subject to the Order of the Grafter's Woman Friend.

My assertion last week that no form of municipal property is so largely misused and abused and so grossly and shamefully converted to private use as the automobiles paid for by the long suffering taxpayers was not lightly made.

The new "inspector," whose car I had been delegated to drive, speedily made plain that qualms of conscience did not trouble him. It is possible that the idea never occurred to him that he was misusing the car by converting it to private use and making it a medium of graft. He fell into the habit naturally. When, on the second night of his career he helped his woman friend into the car and bid me drive to a "white light lobster palace," he marked his start in the city's service smacked of remarkable boldness on the part of a new official. During his first week or so, at least, a show of conscientiousness is reasonably to be expected of a new appointee. But this was not true of this "inspector."

Conditions Grow Worse.

The end of the second day was as the end of the first and I wondered if this sort of thing was to be kept up or if it was only the usual new toy that would lose its attractiveness when it had ceased to be a novelty. I thought that this soon would be the solution of the situation and found comfort in the thought that "this wont last."

But it did last and instead of getting better it became worse. The theatre in an adjoining town was an easy run for the car, to be followed by dinner and a drive that kept me from my home until two or three in the morning, and probably later, when tire trouble, that ever present nightmare of the chauffeur, held me up for an indefinite time on the roadside, sometimes far from the help of even the feeble glow of a street gas lamp.

By this time I had an opportunity to study my new superior with the result that I concluded that he was a fine, big hearted fellow who would go to any extent for a friend and was quick to forgive an enemy. His early life had been spent far from the city, its influences and temptations, and in a place where a motor car was not only a luxury but a curiosity as well. I recall one night as we were going along one of the drives, he turned to me and said:

"Malcom, I never thought that I would see the time that I should have an automobile to do with as I pleased; I tell you it's just plain bully." And there you have the key to his character, the unaffected expression that shows his lack of appreciation of the fact that the car was given to him for a certain purpose, to be used as a means not as an end, and he failed to see it, even as he failed to realize the immense importance of his position with its responsibility to the administration and to the taxpayers, yet he was ever ready to do a favor, and was, indeed, a big, good natured boy.

Routine of Koystering.

My work soon settled down to a pretty regular routine. I met "His Highness, as I affectionately named him without his knowledge, at about nine in the morning, then a quick, hard drive about the city until noon, at which hour he had lunch at a club while I sought a cheap restaurant; then to the office until about three and afterward to some friend's house with its consequent wait of anywhere from fifteen minutes to three hours, followed by a ride to various hotels or apartments where friends were awaiting by appointment to join the party, then to some famous restaurant of the city or a suburban inn, and at times to a hotel in some town or adjacent state, after which the guests were returned to their respective homes and I was through my day's duty as a municipal chauffeur.

The car that we used was a low power, rear entrance tonneau which, without the top, was not a thing of joy to a user on a rainy day, so we put on a top of the semi-limousine type which, with its glass panels in the back, its side curtains and glass front, offered protection to the occupants. When I first saw the addition I easily prophesied that the relaxation that had been mine on rainy days was to be a thing of the past; and I was not mistaken.

I recall one night, the evening of a day of continuous rain which had left the streets in a condition easily to be imagined, and the parkways in even worse shape for driving, I had driven "His Highness" home at about six o'clock and followed him to his rooms for some purpose; I was dumbfounded when he went to the telephone and calling a friend asked him to go for a ride. As it was raining hard at the moment and gave every indication of continuing for the night I was not surprised that the invitation was declined and hoped that that would settle the question; but I reckoned without due knowledge of his fondness for the sport. One after another of his friends were called up with the same results until after four or five declinations there came an exception when two were found who would go—two women whom he called for and took to a restaurant preliminary to the extensive ride that followed through the parks and drives afterward. And all that time it rained as though the very heavens were hoping to dampen his and their ardor.

It was a common thing to load up the little car—which should never have had more than a light runabout body—with four or five adults and then go cruising about a hilly country with a load that was a tax on its power on the hills on even the first speed. My remonstrances were without result. His answer to them was usually something in this vein, "Well, it will go, won't it? Yes? Then keep it going until it stops." Explanations and remonstrations made no difference. It was always a case of "Keep her going until she stops."

Luxury Adds to Labor.

I had been driving him about for two months when there became available for our exclusive use a fine, big, 50 horse, seven passenger touring car. I was sent to get it and at first sight of its magnificance my spirits fell and all hope died within me. If the little, ante-dated, low powered, uncomfortable, scratched-up, noisy car which we had been using was capable of giving so much pleasure and capable of responding to such unusual demands, what could be the future of this modern luxurious equipage, and, much more to the point, what was to be the future of the chauffeur who was already being called upon for fourteen hours a day?

I had noticed that of many of the friends of the "inspector's" who had ridden in the old car only a few had remained faithful after the novelty of automobiling had worn away; and it was surprising how quickly it did wear away after they had been required on one or two occasions to walk up steep hills. But with the advent of the new car the old friends returned to the fold and to their ranks was added a liberal reinforcement making in all a number sufficient to furnish companionship at any time and of a quality so varied that any particular form of contemplated relaxation was sure to find its votaries in the ranks.

Of course, with all this running about on unnecessary journeys, that is, unnecessary from the viewpoint of the taxpayers who were supporting the equipages which they had supplied with an intention that they were to be utilized for the benefit of the municipality rather than as a perquisite of the office or the personal property of its accidental and temporary incumbent, the cost of maintenance and upkeep was vastly in excess of any reasonable sum that could

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be conscientiously expended incidental to the actual mileage encountered in the performance of departmental inspection and official routine. Occasionally, the odometer would show as a result of the day's traveling a total of about 110 miles, of which possibly 20 would be a fair number at which to set the distance actually covered in the interests of the city. Later this was further reduced to zero unless in a spirit of charitableness one may ascribe as "official" the run to the inspector's house to get him before, and return him after, a pleasant excursion.

Free with Public Money.

In addition to the cost of upkeep incidental to the maintenance of a large car, aside from fuel expense and tire replacements, I soon found that a spirit of generosity prevailed which would permit me to obtain requisitions for accessories that under the former administration would have been denied. In this connection I recall an incident in which I figured during the period that I was driving a car for myself as an inspector of the department.

The horn bulb, which incidentally had done several years service, so far as I could find out—at any rate, the date of its purchase was so far in the past that no one knew from whence it had come or where I could go with the hope of finding its mate or one with the same threads—had split and was useless. I sought the proper authority with the request that I be given permission to get another if I could find one, or failing in that, be allowed to buy an entire horn at a cost not to exceed $3. The reply was characteristic of an executive who was trying to economize when spending the public's money:

"See if you can't fix the bulb. If you can't do so, I'll give you an order for another."

In contradistinction to this was the reply under the new regime when I asked permission to get a special horn which I explained would cost $25:

"Sure, if you need it, get it."

Though it may have been a compliment to me, an expression of confidence contained in an intimation that it was believed I would ask for nothing that was not best suited for the purpose to which it was to be put and necessary to a proper conducting of the work in which I was engaged, yet it was very different from the conditions that had formerly obtained and was an expense that the executive would not have incurred if it had been for his own car to be paid from his private purse. I know the man sufficiently well to make this as a positive assertion.

For some time after the receipt of the new car it was used to a limited extent in the city's service, by which I mean that it actually carried city officials who were riding for the sole purpose of performing the duties that were demanded of them by the position that they filled. But these occasions became rarer and rarer and gradually the car and its chauffeur was withdrawn from the municipal work and they became, respectively, practically the personal property and individual attendant of the inspector. They were instruments of "graft," pure and simple.

From the first I had given it out that I could not and would not be the recipient of tips or emolument other than the salary paid me by the city. My stand on this question may have caused the inspector to feel that I would not submit to being treated as a lackey and as a sop to my pride, or maybe as a tribute to my personality, I was formally introduced to the women as well as the men who were occupants of the car; and they invariably treated me as an equal—though sometimes I felt that it was graceful condescension on my part to permit it—until our destination was reached, when, if it was a restaurant or road house, they sought the guests' domain while I was left to inquire my way to the kitchen or the servants' quarters.

Meals at City's Expense.

At first it was impossible for me to seek as my proper place a seat at the tables reserved for the menials of the establishment and on several occasions I deprived myself of required nourishment rather than submit to a condition entirely foreign to me and repulsive in its suggestion that I had become a servant; but each time the deprivation had brought on a severe headache and I was forced to either accept existing conditions or resign from my position, and I chose the former.

At first it was very hard, but I found a certain satisfaction in paying for my meals and declining to permit the inspector to do it for me. It is true, and I appreciated the fact that I was being put to an unusual and unnecessary expense; unusual, because as a "city mechanic" the law required that I should work not more than eight hours a day; unnecessary, because at my home there was prepared a meal for those who were there that I could have partaken of without extra cost. But I finally had to yield even this small means of satisfaction as the eating places with very few exceptions maintained the same scale of prices for the servants' quarters that they did in the guests' rooms with the result that a simple, substantial meal was impossible under a dollar and a half and that cost coming every night was an impossible drain on a salary of one hundred a month, so I yielded even this point and it seemed to me when I signed his name to the first check that I had in fact ceased to be a city "gas engine expert" and had become a chauffeur with all that that term implies.

I had lately been receiving such a variety of orders that when one afternoon I was told to have the car at the apartments of Mrs. Blank early on the following morning I was neither surprised nor willing to remonstrate. It was raining, but I obeyed the order and at an early hour the hall boy announced my arrival.

"Mrs. Blank says that she does not wish to go out while it is raining," the lackey told me on his return. "She directs that you return to the stable and await her call."

Think of it! And I was a city employe supposed to be performing duty only for the city and taking orders only from a city official, while the stable at which I was to await the woman's call was a municipal building.

About noon the sky cleared and a telephone message from Mrs. Blank directed me to return at 2 o'clock. During the wait I had had the car washed by the department washers so that it was with a clean vehicle I met her when she appeared with Mrs. Dash and made a round of calls to be followed by a drive through the parks until 6 o'clock, when we met by appointment Mr. Space and Dr. Keen with whom we went to an inn about 30 miles away. The inspector was not one of the party. I was subject to the lady's orders; and this sort of thing happened not once, but scores of times. In fact it had become so common for the car to be put at the disposal of friends and relatives that the inspector was frequently deprived of its use and though he had a horse and buggy and a driver also assigned to him, they could not take the place of the machine nor was the buggy as comfortable, so the little car was again put in commission and a repair shop helper taught to drive it. With this added equipment I was freer than before to respond to outside demands; and I responded, too. In this connection I may relate in passing that one afternoon I was directed to take three relatives of the inspector and show them about the city; the commissioner's car and chauffeur were detailed to the use of some visiting cousins of the inspector, and the inspector's driver was ordered to hitch up his private rig and take a sister for a drive, which is in the nature of "going some" at the taxpayers' expense.

Sight Seeing for Friends.

In the course of this sort of duty I had an amusing experience with one of the inspector's friends from a distant town—probably some place where an automobile was a rarity and the chauffeur a species entirely unknown; I had been given the usual order to take him out and show him the city as well as drive him to any places to which he might ask to go.

We had covered the city very thoroughly, had gone to the points generally visited by strangers, the drives and parks had been traversed, the famous residences had been pointed out as well as the homes of various notorious citizens whose intimate relations with the county attorney and several grand juries had been the means of making anything associated with them of interest, and finally the time came when he had to leave for a club appointment. I drove him to the designated address; as he left the car he

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came, and, reaching in his pocket he remarked:

"Well, I intend to pay my fare."

He may have been a humorist or this may have been the occasion of a pathetic incident. However, I accepted the five-cent piece that he offered: I still have it—the first and only tip that ever came into my possession. I solomnly assert that the narration of this afternoon's work and remuneration, improbable as it does appear, is "the truth, the whole truth and nothing but the truth."

It struck me as being so very unusual that I entered it in my diary, from which I purpose drawing some extracts next week.

Facilitating Use of Electrics.

In connecion with the development of the vehicle industry one particular setback has been encountered in the charging problem, which always has been more or less of a hindrance to the small and local user, though the owner of a large equipment seldom has counted it an impediment to successful working. Although the electric vehicle makers and dealers always have been active in teaching the most economical use of their product, not as much has been done to lighten the burden of the charging costs as might have been the case. The policy of the Studebaker Automobile Co., South Bend, Ind., recently undertaken, to market a mercury arc rectifier in connection with the sale of its vehicles, therefore marks a notable departure.

The rectifier is used to modify the alternating current ordinarily supplied for lighting purposes, in such a way that it may be used directly to charge the vehicle batteries. Considerable equipment which would otherwise be required is thus done away with in localities where only the alternating current is available, and the average running expense is reduced from $25 or $30 per month to $8 to $10, as is claimed. The rectifiers employed, it is said, are the first to be handled commercially by any firm of automobile makers, are similar in principle to the Hewitt device brought out several years ago, and are made on specification for the company by the Westinghouse Electric Co.

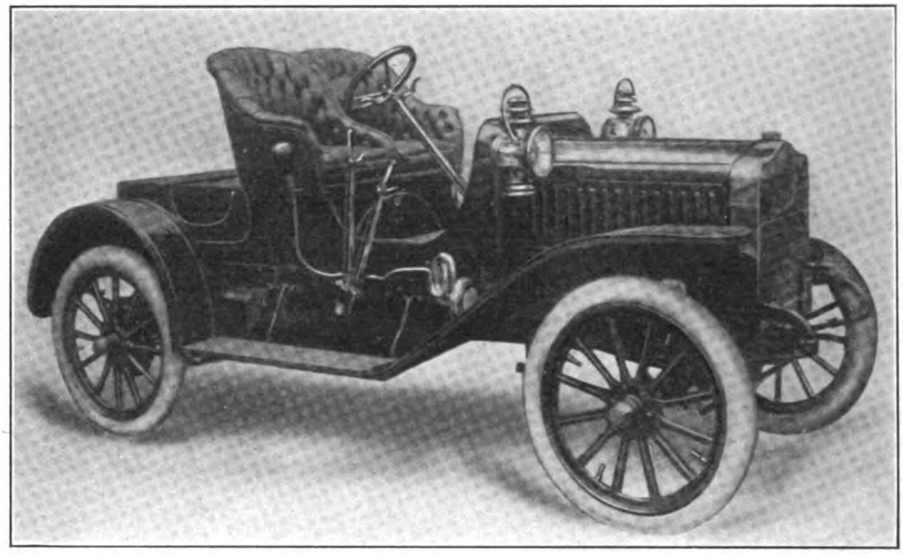
Boston Planning Taxicab Service.

Boston has one taxicab. It is the forerunner of others, if the plans of the Boston Taxicab Co. can be materialized. This company, which is a subsidiary of the New York Taxicab Co., is of recent incorporation, and has filed with the Boston police commissioner an application for approval of its rates and allotment of stands. There has been some delay in this matter for the schedule of the charges for taxicabs is different from anything in the line that has heretofore been used in Boston, and the police authorities have been obliged to give it considerable study to see that it does not conflict with the established rules relating to public vehicles.

RACINESS IN A NEW RUNABOUT

Improved Features in Latest Addition to the Maxwell Line—General Specifications of the Car.

Still another new model has been added to the rapidly growing line of vehicles which are produced under the systematic management of the Maxwell-Briscoe Motor Co., Tarrytown, N. Y. Model K, as the newcomer is known, is very similar to Model D, insofar as chassis construction is concerned, the most noteworthy points of difference between the two being in the slight modification of the frame which is made necessary by the greater rake of steering column which is one of the features of the new type. The body conforms to the popular runabout pattern, with folding chauffeur's rumble in the rear, which is sufficiently large to accommodate two persons if necessary. When collapsed, the back fits nicely into the deck, leaving a smoothly finished exterior. Another improved feature, noteworthy in this connection, is the placing of the tool box in the extreme rear of the rumble, the hinge of the cover serving as the hinge upon which the rear seat folds up or down.



NEW MODEL MAXWELL RUNABOUT

The general specifications of the chassis are: Four-cylinder vertical motor, with cylinders of 4¼ inches "square" dimensions, rated output 24 horsepower. The three-point, unit construction for engine and change gear set, which is a well known Maxwell feature, is retained as a matter of course, as is the multiple disc clutch. The interlocking arrangement preventing careless misuse of the gears also is retained. Final drive is by propeller shaft and bevel gear to the divided rear axle, a special bearing in the differential taking up all side thrust and preventing backlash.

The wheel base is 96 inches, the wheels are 32 inches in diameter, and the springs are 36⅛ inches and 45¾ inches in length, front and rear. The rear springs are set well out toward the hubs in order to bring the load as nearly as may be to the point of support. The brakes are of the type employed on the Model D car, the external member being of the "clam-shell" type fibre lined, and hinged at the bottom, while the internal expanding brake is lined with segments of seasoned hickory boiled in oil. The general appearance of the vehicle is neat and stable, thoroughly in accord with the other members of the line, yet sufficiently "racy" to satisfy all who desire a machine coming under that appellation.

Sidelight on Upkeep of Tires.

"Damn it! they've got to pay me," ejaculated the chauffeur who had just been "turned down" in his quest for a commission from a firm of whom he had bought a set of tires. "It was up to me to get those tires anywhere I wanted to and I picked these people out because I thought they'd give up."

"They used to," he continued, as his wrath increased, "and they'll have to again if they want the orders."

"What are you going to do," asked one of his hearers, "if none of them give commissions, you've got to have tires just the same?"

"That's all right," was the reply, "I'll have to have 'em, but," and a grin spread over his features, "but I won't have to buy them so often, for I'll keep out of car tracks and use 'em so carefully that they'll last so long there will be little 'doin'' in the tire business. Oh, they'll give commissions all right, all right, before we get through."

Los Angeles chauffeurs, mechanics and repairmen have organized as the Mahout Club, which starts with a membership of 96, and these officers: President, John Keough; vice-president, Harry Bore; secretary, Sid. Kendall; treasurer, Ray Rogers.

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USING THE MOTOR AS A BRAKE

Simple Method Adopted in the Panhard—Device Altering Valve Action to Cause Resistance to Motion.

Generally speaking, the simplest and most satisfactory way to effect the retardation or stoppage of the machine is by means of friction brakes applied in any one of the several ways at present meeting with the approval of the most successful designers. At the same time, it is evident that the growing practice of supplying means of using the motor as a brake is at once logical and for long descents safer and otherwise more suitable than the use of plain friction devices. The real difference in principle between the two systems, is of course, that where in the one case the energy of the moving vehicle is converted into the heat of friction between metallic surfaces, in the other it is converted into the heat of friction between the molecules of air contained in the engine cylinders, and as such, is carried away through the exhaust without imposing any stresses on the machine other than it may be called upon to bear in its normal action.

Several of the Continental makers are now using braking devices of this description, and with considerable success, one of the simplest and most successful, judging by its design, being that applied to the 1908 Panhard cars, and shown for the first time in this country at the recent Importer's Salon in New York. It is to be understood that merely by closing the throttle tightly and permitting the car to drive the engine a certain amount of resistance to motion may be obtained. This, however, will be confined solely to the partial vacuum established during the suction stroke, and while analagous to the one-power-stroke-in-four of the regular action of the machine, is by no means as effective, as the resistance in the case of braking is not very considerable in amount. In several of the systems of motor braking in vogue, the Panhard being among them, the plan is adopted of altering the valve action in such a way as to introduce some measure of resistance to piston motion during three or four successive strokes, instead of one only. In the Panhard system, this is done by throwing an additional cam into action on the exhaust side of the motor when it is desired to use it as a brake, thus converting it into a compressor for the time being.

With this in view, the exhaust cam shaft is made slidable in its bearings, the cams being of the two-step variety, one step being of the normal profile, while the other has three lobes instead of one. When the shaft is thrown over into the braking position, the throttle being closed for the time being, the first down stroke of the piston is made against a partial vacuum. Just at the end of the suction stroke, the lobe, A, raises the valve momentarily, admitting the gases from the exhaust manifold to the cylinder to overcome the vacuum. Thus during the first stroke T1, the resistance developed is measured by the arc B1, of the diagram. The cylinder be-

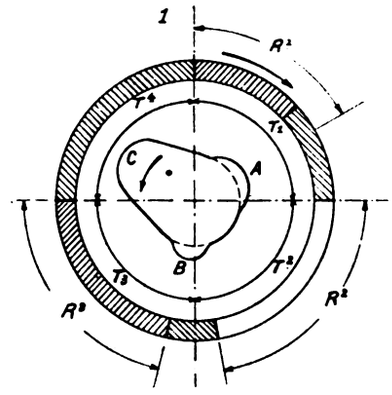


Fig. 1

ing filled with gas at this point, the return of the piston is made against compression, the stroke, T2, having an equal arc of resistance, R2, up to the point of action of the cam, B, which lifts the exhaust valve

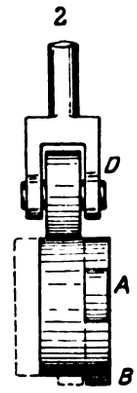


Fig. 2

again for an instant at the end of the stroke, releasing the compressed air.

During the third stroke, when the explosion would ordinarily be taking place, the piston is again moving down against a par-

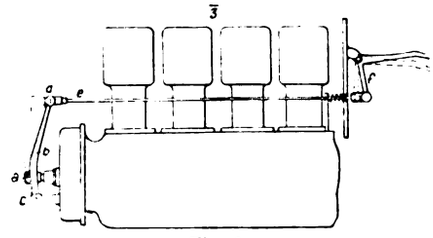


Fig. 3

tial vacuum, the stroke, T3, being completed against the resistance, R3. During the fourth stroke, T4, the regular cam lifts the exhaust valve and permits the cylinder to be entirely freed of its contents. The net effect is thus to produce three strokes out of four during the greater part of which the motion of the piston is resisted. Various tests go to show that under these circumstances the braking effect of the motor is equivalent to about one-half of its power, regardless of its size.

The way in which the braking is effected mechanically is shown plainly in the second and third illustrations. Fig. 2 shows the cam and follower in elevation, the amount of longitudinal displacement necessary to effect the braking being shown by the dotted lines at the left of the figure. Fig. 3 shows the motor in outline, and reveals the outward connections which are under the control of the driver.

A short lever, b, articulated to the end of the crank case at c, is connected by means of a suitable yoke, to the end of the cam shaft at the point, a, the rod, e, taking hold of its upper end, d. A special brake pedal, f, is mounted on the foot board along side the clutch pedal and is normally held up by a spring, against which it must be moved to depress it. Depressing the pedal thus serves to pull the rod, e, forcing the cam shaft along in its bearings until the special cam faces come under the lifter. Proper interconnections are provided to prevent the throttle from being opened while the brake pedal is depressed.

About Air Baths for Varnish.

Many of the best varnishers in the carriage industry insist upon giving their varnishes an air bath prior to applying the material to the surface. When opening a sealed can of varnish they remove the stopper for perhaps twenty-four hours or more, and then prior to individual instances of use thereafter the stopper is removed for a half hour or more before using. It seems to be a well established belief handed down by the top-notch finishers of former days that the inflow of fresh air into the can of varnish is effective in dissipating a certain harmful turpentine gas generated by the tightly enclosed varnish. This gas, during an earlier day, and by not a few well-informed finishers in this day, was and is estimated as the spirit of varnish, possessing sufficient penetrating power, and capacity for nipping into the under coats, to leave the varnish void of its natural brilliancy, and showing a distinct sanded appearance. It is not to be understood that all, or nearly all, varnishes evince this property, but the disposition is quite common enough to arouse interest in the matter, and to suggest this method of relief. At the same time, the air bath treatment can be easily, and often has been, overdone. Varnish, through the evaporation of the turpentine which it contains, if left to protracted exposure to the air, after the first extended air bath, will soon thicken beyond a free and limpid flowing state, which condition unfits it for first-rate varnishing purposes. The happy medium, as stated, consists of an initial air bath of 24 hours, and then following half-hour baths as the varnish is used In case of small shops it is a good plan to buy the varnish in one quart cans.

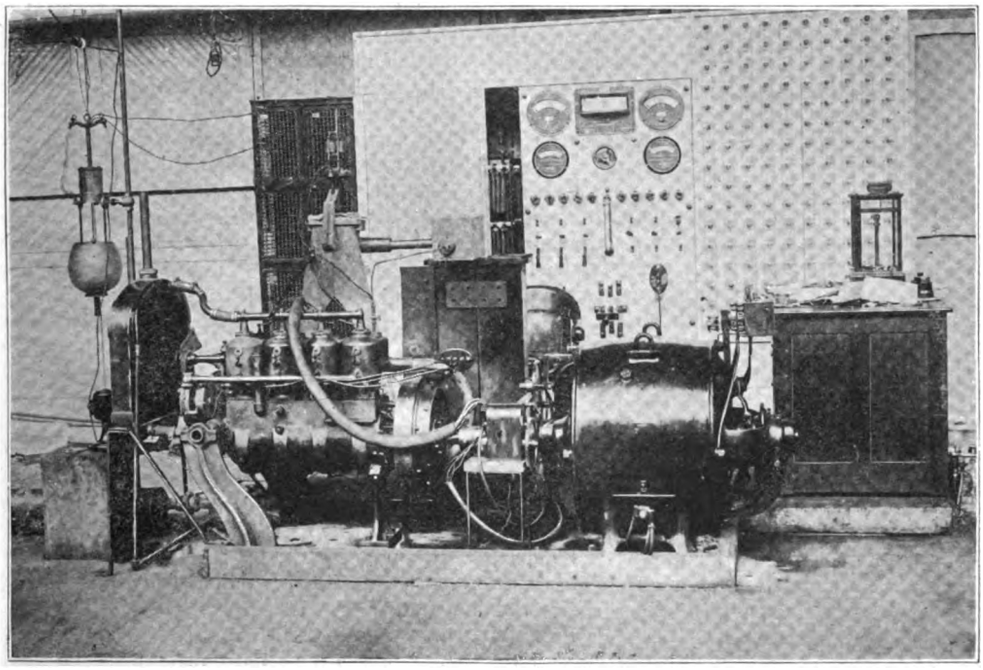
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HOW FACTORY TESTS ARE MADE

Unique Apparatus at the Rambler Plant in Kenosha—Its Broad Utility and Compact Arrangement.

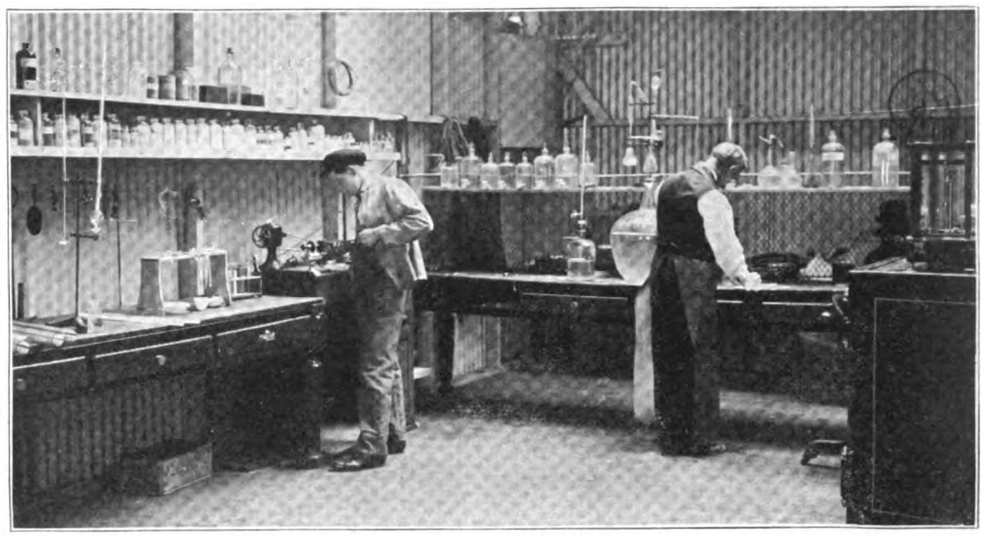
Few motorists outside the direct range of factory influence have any conception of the amount of work coming under the inclusive head of testing and experiment, nor of the amount of plant which the up to date maker feels called upon to maintain for this purpose alone. Every factory has its own testing department, to be sure, but the extent to which the most representative ones are equipped for this sort of work is really surprising to one who has not kept in close touch with the development of the industry. Thus in the testing department of Thomas B. Jeffery & Co., at Kenosha, Wis., is an equipment capable of examining the characteristics of every element of the complete car from its crude state up to the point of finishing and finally in regard to its performance in the machine.

The general principles upon which such apparatus must be based, are of necessity much the same in every case. In their applications, however, there is room for considerable originality. In this way the electrical engine dynamometer designed especially for testing the Rambler motors, though similar in a general way to many others already in use exhibits a combination of broad utility and compact arrangement which is altogether unique.



ELECTRICAL DYNAMOMETER FOR TESTING ENGINES

The engine to be tested is placed in a cradle corresponding in form to the chassis of a car, but solidly bedded on the floor, all its connections being made in the same way they would be on the car, even to the carburetter, the electrical connections, and the radiator, which is mounted on a stand in front of the motor. The master clutch connects the crank shaft with a flexible coupling driving a large electric generator which may be used either as a load upon the motor, or in the capacity of an electric motor, to drive it. In either capacity the amount of current passing through the armature coils is accurately measured and affords an exact and immediate indication of the work involved, whether produced by the gas engine itself, or required to turn it over idly. Indications of the first class afford a measure of the developed horsepower of the engine, while those of the second give the self-absorbed power, or engine friction. The sum of the two theoretically gives the indicated power, or work actually developed by the combustion taking place within the cylinders. The singularity of the arrangement consists in the amplifications of these purposes which it is possible to bring about without altering the arrangement of the plant or performing any more complicated operation than throwing a switch or two. A further indication of this is seen in the fact that the rear axle of a car may be substituted for the motor and the friction measured from the ground to the clutch, thus affording means of checking all friction losses in the car.



CORNER IN THE CHEMICAL LABORATORY

The fields of the generator are separately excited, so that all the current passing through the armature is measured directly. All generator losses are standardized and being directly proportional to speed, are applied in the form of corrections to the readings, so that the horsepower produced by the engine under test may be calculated from the volt amperes read from the switchboard. To facilitate rapid observations and reduce the time involved in making a series of test runs, however, a recording watt-meter is employed which is provided with special graduations and which is read in conjunction with a speedometer which is geared to read in miles per hour. Thus the horsepower of the motor in terms of in miles per hour instead of revolutions per minutes may be read off at once. The same observations may be made equally as well when the engine is being driven electrically and the frictional horsepower is required.

For studying the internal action of the motor a manograph is employed, and by means of an arc lamp it is possible to record the manograph cards directly on sensitized paper and without any intermediate processes, thus making permanent record of the tests. Cards so taken may be used in studying the design of the motor in a variety of ways and by making observations with the engine driven electrically, it is possible to obtain very accurate data as to the results obtained with different forms

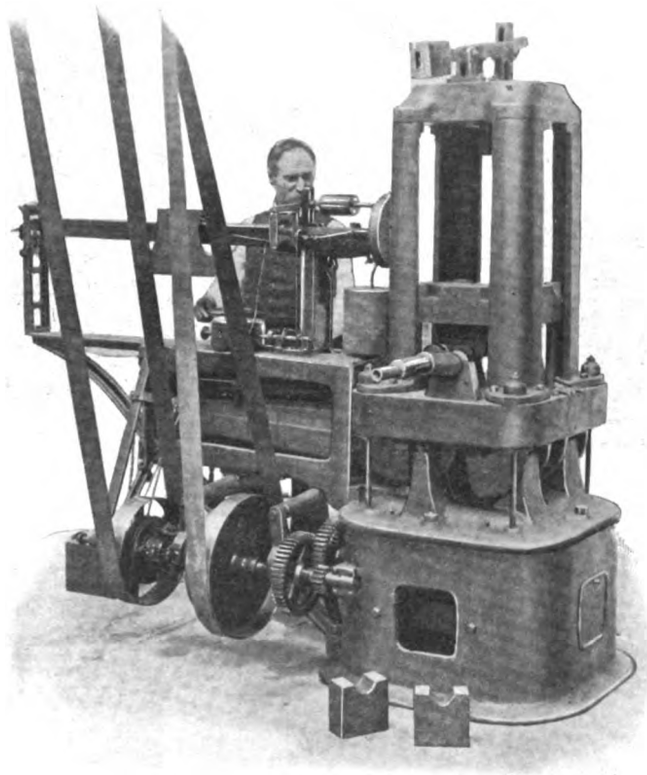
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of valve and cam design. As these observations may be made under any sort of circumstances desired, that is to say, with the motor hot or cold, loaded or running light, or with any desired range of carburation and ignition conditions, it is evident that the possibilities offered are practically unlimited.

Mounted near the testing stand is the large marble switch board, upon which are the recording instruments and a series of switches for controlling the current in the armature and fields of the generator as well as for graduating the electrical load. This consists principally of a series of iron grids, in addition to which a large bank of lamps are used. These are controlled by switches in such a way that the load can be graduated with great nicety, all fractions between .1 and 53 horsepower being obtained instantly.

A pair of fuel measuring tanks are located on the back of the board and connected with a gauge glass conveniently located. Either may be used on requirement. One is of such size that its capacity within a stated height is .1 gallon, while the other is 1 gallon. Thus the consumption of the engine may be measured closely within either short or long time limits. Cocks are provided on the face of the board for filling either of the measuring tanks from a supply tank, which also may be made to supply the carburetter directly when the consumption tests are not being made. The gears which drive the speedometer are also used for driving a magneto where one is in use, and also to operate the manograph.

All wiring and other connections from the switchboard to the test stand pass under the raised floor upon which the operator stands to the service piller along side the engine, from which short leads are taken to their final destinations. All the controlling mechanism is thus directly under the eye of the tester, while the complete operation of the plant in whatever way it is used, may be carried on from that standpoint, thus saving time and labor very materially.



MACHINE FOR TESTING MATERIALS AND PARTS

So complete and perfect are all the arrangements that it is possible to make a complete horsepower test of a motor at speeds ranging from 5 to 50 miles an hour within a space of ten minutes. Notwithstanding the great facility with which it may be handled, however, nothing in the arrangements has been designed with a view to sacrificing time to accuracy, and the observations may be made as closely as may be desired.

While the chief interest in the plant must naturally center about the arrangements for testing the completed machine and its components, the chemical and physical departments are equally important as determining the original status of the the materials to be used in the car. Here delicate analyses may be carried out, the properties of any "run" of castings investigated, or new formulae tried out. The picture showing a corner of the chemical laboratory gives a good idea of the apparatus used.

The testing machine shown in the third illustration, is capable of subjecting materials of all sorts to tensil and compressive tests, recording the elastic limits and breaking strengths which are required by the designer in order to determine the proper proportions of parts. More than this, it may be used to test the parts themselves in various ways, recording the highest load which they can carry safely and showing in advance what may rightfully be expected of the finished product once it has passed out of the crysalis stage and begun to undergo the trials of the road.

Why the Varnish Sweats.

It long has been established among carriage painters, hundreds of whom are now enrolled under the banners of the automobile builders, that the main cause of the sweating of varnish is undried, or only partially dried, undercoats of color or of varnish.

An imperfectly dry coat of paint, or of any other material, will retard the drying of the coat of material applied over it, and while these coats may be, apparently, dry with the result that when successive coats of material are placed over them, the condition of the surface under the various layers of material grows gradually worse, so that when the finish is reached, all the elements are present and well developed, for the speedy appearance of the "greasy gloss," otherwise characterized as sweating out. The hurry calls for motor cars during the past year or more have necessitated a system of painting far separated from the best traditions of the craft, affirms a carriage man, and the natural sequence has been, among other untoward surface manifestations, more or less of the sweating out trouble. Given sufficient time for each coat of material, paint or varnish to harden thoroughly and the elimination of the principal cause will have been accomplished. Varying degrees of temperature affect materially the drying of varnish, and, indirectly invite the sweating out disease.

As a matter of safety, varnish should be rubbed and set away for a time, over night if possible, and then rubbed again just prior to applying an additional coat, which treatment will, as a rule, render the surface immune from sweating attacks. Without exception, varnish rubbed and set away for several hours, however hard it may be at the time of rubbing, will accumulate the essence of certain prevailing gases in sufficient quantity to cause sweating of the following coat, should removal of such accumulations by rubbing be neglected.

Electrically propelled fire fighting apparatus has already seen more or less use in Germany and Austria, but up to this time has been but little used in Great Britain. The recent construction of a new "fire escape," or extension ladder for the Liverpool fire brigade, is therefore reckoned a significant innovation. The machine carries an 87-foot ladder, electrically manipulated, and is driven by current from an 80-call battery.

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'TWILL BE A FEATHER IN HIS CAP

Unique Trophy for Winner of Savannah's Long Distance Race—Change in Course for Short Contests.

Whoever wins the 360 miles race for stock cars at Savannah, Ga., on March 18th, will be able literally to place a "feather in his cap." The Savannah Automobile Club, which has in hand the promotion of the proposed meet, consisting of three stock chassis races to be held over an 18-mile circuit near the city, on Tuesday and Wednesday, March 17th and 18th, has announced that it will give a silver feather to the winner of the long race.

The idea is novel and will give to the victor a souvenir of the race besides a leg on the Savannah Challenge Trophy. This trophy is different from anything that has ever been offered, according to reports from the Georgia city.

The trophy will be a life size bust, in silver, of the Indian Chief Tomachichi, who was a leader of the Yumacraw Indians, and a personal friend and ally of General Oglethorpe, who founded the city of Savannah. A reproduction in silver of the Indian chief, which stands in a public square in Savannah, will form the base, upon which will rest the bust of the departed Indian, dressed in full war path regalia.

The war bonnet, which will be a string of feathers, will be arranged to allow the insertion of additional feathers. The plan is to have two feathers made each year the race is held. On each will be inscribed the name of the driver, the winning car, time, and other details of the like; one feather will be stuck in the head-dress of the Indian and a duplicate presented to the winner. The trophy itself will virtually be a perpetual affair as it will have to be won three times by a car of the same make before it will become the absolute property of anyone. Until that time it is expected the trophy will remain in the custody of the Savannah Automobile Club.

It is stated that two valuable silver cups will be awarded in the other two evnts. These will be known as the Southern Runabout Cup and the Southern Six-Cylinder Cup, and will become the absolute property of the entrant of the winning car.

Whether the meet will be held is problematical and depends upon how readily cars are entered. As has been stated in the Motor World, the meet will take place if thirty cars are entered before March 1st for the three events. Late reports from Georgia state that the two shorter races which are carded for the first day and over a ten mile course, will be run over the longer course, that measures eighteen miles. It also is announced that a gang of convicts already is at work repairing the roads, and making what improvements will be necessary. The decision to hold the three races over one course will lessen the expense of repairing the roadway somewhat.

No Dewar Trophy Race This Year.

The one mile race for the Dewar trophy will not be held this year; at least not at the Florida meet, according to an announcement sent out this week by the contest committee of the Automobile Club of America. The committee laid down conditions that at this year's meet cars would have to cover at least 100 miles at an average speed of 60 miles an hour in one of the long races in order to qualify for the short races. This was done to eliminate freaks. It is said that both the makers of the Ross and Stanley steam cars, which have each won the trophy, objected very vigorously to this clause. As the trustees of the Dewar trophy upheld Ross and Stanley in their contention, the Automobile Club of America, without wasting any time in argument, struck the event from the program.

The beautiful conception of amateurism permitted by the American Automobile Association has been further enhanced (?) by changing the conditions for the "invitation race for gentleman amateurs" so that any one invited to drive in this contest need not own a car, but may borrow one for the occasion, providing he drives it himself.

Harrisburg's Endurance Run Program.

The Motor Club of Harrisburg, Pa., will hold its annual endurance run from that city to Philadelphia and return on May 5th and 6th, these dates having been selected at the last meeting of the club. The first day's run will be through Lebanon, Reading, Kutztown and Allentown, while the return journey will be through Norristown, Pottstown, Reading and Lancaster, a distance of about 250 miles. Cars will be divided into four classes as follows: Touring cars costing $2,500 and over; touring cars costing less than $2,500; runabouts costing $2,000 and over, and runabouts costing less than $2,000. In addition to the four trophies offered for the run, the four touring cars that were tied in the run last year will attempt to decide permanent ownership of the cup that was not awarded.

To Enforce the Rule on Amateurs.

The registration committee of the Pacific Association of the Amateur Athletic Union has begun the enforcement of the resolution adopted by the national body to the effect that automobilists who compete for cash or against professionals shall not be recognized as amateurs. The Pacific Association has appointed an "automobile commissioner" to "keep tabs" on the offenders and a considerable stir has resulted. As the automobilists on the coast have followed the ridiculous rule of the American Automobile Association, which permits an amateur to compete for money of against anyone he pleases, the action of the A. A. U. branch will prove far reaching.

START FOR NEW YORK-PARIS RACE

Foreign Entrants Depart for America Amid Enthusiasm—Meeting Here of Interested American Automobilists.

There seems little doubt now that the proposed New York-Paris race will start from this city sometime next month. Although the plans of the four American manufacturers that are said to have formally entered cars have been kept very much in the dark the foreign delegation actually have started for New York.

According to cable dispatches the German Prothos car received a great adieu when it left Berlin Sunday morning, bound for Hamburg, where it embarked on the Kaiserin Auguste Victoria yesterday, Wednesday. In spite of the early hour the streets were crowded and scores of military attaches gathered to bid farewell to Lieut. Koeppen, of the 15th Infantry, who will accompany the car as correspondent for a Berlin newspaper. Hans Knape, an experienced race driver, was in charge of the car, and Ernest Maas, the remaining member of the crew, did not accompany it overland to Hamburg, but went to Havre to see if he could obtain any pointers from the French and Italian entrants. The Germans are due to arrive in New York City, Friday, February 7th.

The three French and one Italian entrants received just as enthusiastic a send-off when they left Paris Tuesday morning, 28th inst., en route for Havre, where they will embark on the Lorraine Saturday. The steamship is due in New York February 8th, one day after the German boat.

It is evident that the Itala car will not start, as it was not among the number that left Paris this week. The cars and their drivers were the 40 horsepower De Dion, manned by G. B. Ct. Chaffray, who originally proposed the long distance "race"; 40 horsepower Motobloc, driven by M. Godard, who finished second in the Pekin-Paris event last year; the 12 horsepower Sizaire-Naudin, with M. Pons, also a competitor in the Pekin-Paris, at the wheel, and the 30 horsepower Brixia-Zust, driven by Antonio Scafoglio. The last named is Italian, the other three being French.

A meeting of the representatives of the American manufacturers who are said to have entered cars was held in New York City last Thursday, 23d inst., when phases of the contest, relative to the American end of the affair, were discussed. Percy F. Megargle, who has made three trips across continent; John Riordan, who has been over the trail in Alaska, and Luigi Barzini, who accompanied Prince Scipio Borghese, the winner, in the Pekin-Paris "race," were present and spoke of the regions with which they were most familiar. The Thomas car was represented by Montague Roberts; the

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Maxwell by W. J. Hanley and Ernest Coler; the White, by W. S. Shearman; the Corbin, by Philip Stillman, and the Reo by a representative of R. M. Owen. The general impression seemed to be that a detour would have to be made at Reno, Nev., on account of the possibilities of snow blocking the passes in the Sierra Nevada mountains. This would take the contestants to Los Angeles instead of to San Francisco, making a distance of about 4,500 miles for the trip across the American continent. It is figured that this part of the journey can be made in from 30 to 40 days, and allow for the shipment of the cars to Valdez, Alaska, so they would reach there by April 1st. Riordan, who knows the Alaska country like a book, having spent thirteen years there, said he would be willing to spend two years in jail if he could not get a car to Nome by May 1st if he left Valdez by April 5th.

From Nome there follows the run to Cape Prince of Wales, and thence across the Bering straits, which apparently is the worst part of the journey. Once across the straits is a 4,000 miles stretch across Siberia to Irkutsk, and then over the trail blazed by the Pekin-Paris contenders. From Valdez to Irkutsk, however, is country over which no automobile has yet passed, so far as is known.

Dayton Dealer Killed by a Train.

Edward Borderwisch, an automobile dealer of Dayton, Ohio, was instantly killed in a grade accident in that city Monday night, 20th inst. Borderwisch had taken Paul F. Moffett, a friend and civil engineer of Springfield, out for a ride about 8.30 p. m. As the automobile neared the dangerous grade crossing at Sixth street, the gates of which were up, Borderwisch slowed down to let a train pass, and then started across the tracks. Another train, following closely upon the other, caught the automobile squarely. Moffett had a miraculous escape, being tossed clear of the tracks, but Borderwisch was ground to pieces under the wheels and the automobile reduced to junk. For several years Borderwisch and E. M. Glancy who, by the way was killed in a railway wreck less than a year ago, had conducted a garage under the name of Borderwisch & Glancy. Following his partner's untimely death Borderwisch conducted the garage alone, but retained the old firm name. He was 31 years of age, and was married only December 5th last.

This Man Wants Continuous Noise.

In curious contrast to the effort made in every direction to suppress the noise produced by motor vehicles, William P. Cherrington, of Massachusetts, asks for a law to compel the use on every automobile or motorcycle of some device "which will give continuous warning of the approach of such vehicle, and will be no more objectionable than sleighbells."

CHANGES IN GRAND PRIX RULES

Regulation Limiting Piston Area Adopted for this Year's Contest—Other Important Requirements Made.

Regulations governing the 1908 Grand Prix have been adopted and issued by the Automobile Club de France, an announcement of which was made through the Automobile Club of America this week. The race is to be a distance of from 700 to 800 kilometres, and will be held within the first two weeks in July, the date and circuit to be fixed later.

Several changes are apparent in this year's rules, most important of which is the limitation of piston area, and restricting each maker to three cars, those having engines made under the same license not being allowed to enter more than three cars altogether.

After considerable wrangling at the Ostend conference a definition was adopted fixing a maximum bore of 155 millimetres for a four cylinder engine, or its equivalent in surface for any other number of cylinders, and a minimum weight of 1,100 kilos without fuel and water, but including oil in the crank case and gear box. This definition results in a maximum of 75,476.8 square millimetres for a four cylinder engine and the equivalent bore for motors of more or less than four cylinders is as follows, without taking into account the decimals: For 1 cylinder, 310 millimetres bore; 2 cylinders, 219 mm.; 3 cylinders, 179 mm.; 6 cylinders, 127 mm.; 8 cylinders, 110mm.

The entrance fees fixed are $1,000 for one car, $1,800 for two cars, and $2,400 for three cars, acceptable until February 1st, after which date double fees will be charged.

Another important clause in the rules is that which forbids the use of anything other than ordinary gasolene; that is to say, the addition of any ingredient which aims at supplying oxygen other than that contained in the atmosphere, will not be countenanced.

All cars must have a reverse and must be fitted with mufflers having a horizontal outlet. All repairs must be made by the driver or mecanicien, and detachable rims may be used, but the changing of wheels is prohibited. A mecanicien may change places with the driver at the end of any lap, but while on the circuit may change only in case of extreme necessity.

The official colors adopted were as follows: Germany, white; America, white and red; England, green; Belgium, yellow; France, blue; Italy, red, and Switzerland, yellow and red.

Automobile Corps for German Army.

Germany is preparing to utilize the automobile for army purposes in a large way. The Budget Commission on the 22d inst. passed favorably on a bill setting aside a fund of nearly $500,000 for the organization of an automobile transport corps. The plan is to place at the disposal of the army during manoeuvres and in time of war, automobiles of the heavy type used for rough traffic by manufacturers, express companies and others having such traffic. In furtherance of the plan it is proposed to pay an annual subsidy to owners of such vehicles.

Proposed Lien Law for Garage Men.

Garage men have a friend in Assemblyman Orson J. Weimart, of Buffalo, who has introduced a bill into the New York legislature to amend the lien law so as to give them liens on automobiles for services in connection with them. The proposed section reads:

"A person keeping a garage or place for the storage, maintenance or repair of motor vehicles, and who in connection therewith stores, maintains, keeps or repairs any motor vehicle at the request or with the consent of the owner, whether such owner be a conditional vendee or a mortgagor remaining in possession or otherwise, has a lien upon such motor vehicle for the sum due for the storing, maintaining, keeping or repairing of such motor vehicle, and may detain such motor vehicle at any time it may be lawfully in his possession until such sum is paid."

Court Calls Automobile a Necessity.

That the automobile is a necessity was the opinion expressed last Thursday afternoon, 23d inst., by Justice Marceau in the Equity Term of the Supreme Court in denying the application of John H. Love, Jr., for an order to force Arthur E. Luscher to remove a garage from his premises at 292 East 17th street, Brooklyn, on the ground that it injures property. According to the terms upon which the property in that section was sold only one building can be erected upon each of the plots of land. The complainants said that Luscher violated the terms upon which he acquired the property, while the latter declared he did not as he had built a one-story extension to his residence, in which to house his car. The Justice thought Luscher had acted within his rights and in denying the application took occasion to say that automobiles are a necessity nowadays.

Brockton Club has Awakening.

At a special meeting of the Brockton (Mass.) Automobile Club held on January 20th, the following officers were elected; President, Elmer Walker; vice-president, Henry R. Burbeck, of North Abington; secretary and treasurer, H. A. Churchill. The terms of the former officers expired with the beginning of the year, but no meeting was held to elect new officers as the old ones were unwilling to become candidates for re-election because of general lack of interest in the club. Now it is purposed to infuse new life into the organization.

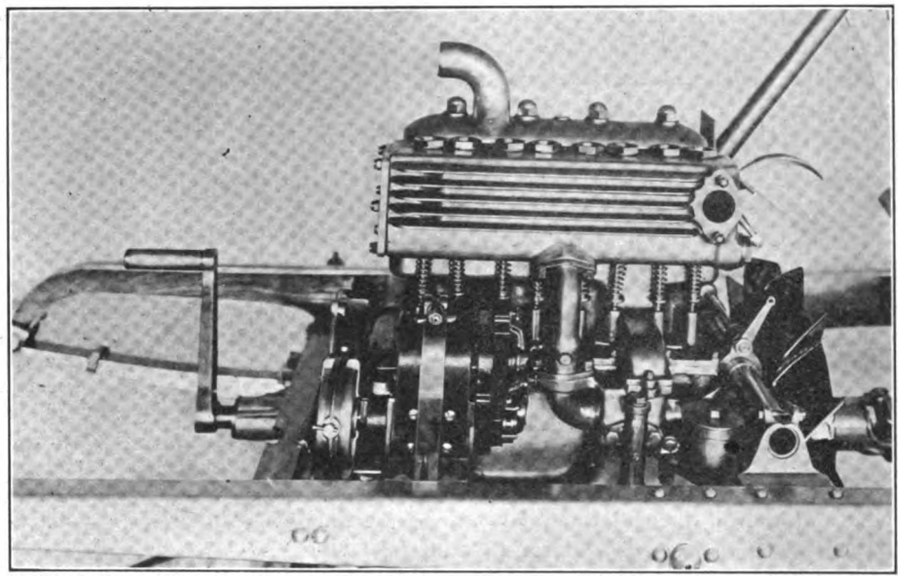
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THOMAS TAXICAB CONSTRUCTION

Block Type Motor One of Its Prominent Features—Other Elements Contributing to Economy of Upkeep.

Among the new designs which the recent show season brought to light, probably none attracted a greater amount of favorable comment than did the new Thomas town car and taxicab chassis. While excellently developed as a light and efficient vehicle for city use, and especially so in the hands of the private owner, the recent booking of orders for a large number of these little machines to go into commercitl service in New York and Chicago directs attention to their particularly utilitarian aspects.

The essence of the Thomas taxicab chassis is the block type motor which, as shown in the accompanying picture, consists practically of but two castings, one of iron and the other of bronze. The former contains the four cylinders, together with their valve pockets, water jackets, and also the intake and exhaust manifolds. The second casting serves as the engine base, also carrying one of the two water ports for the thermo-syphon cooling system, the carburetter mixing chamber and the gear housings. The cylinder casting is cored through from the forward end, and from above, leaving an opening at the front and one at the top to be covered with plates. The upper cover also carries the outlet pipe for the cooling system, which leads directly to the radiator. The exhaust manifold, which lies to the outside of the cylinder casting is amply cooled by means of longitudinal flanges running its entire length, while its proximity to the intake port serves to warm the incoming gases sufficiently to aid the effect of compression in producing a quick-firing mixture.

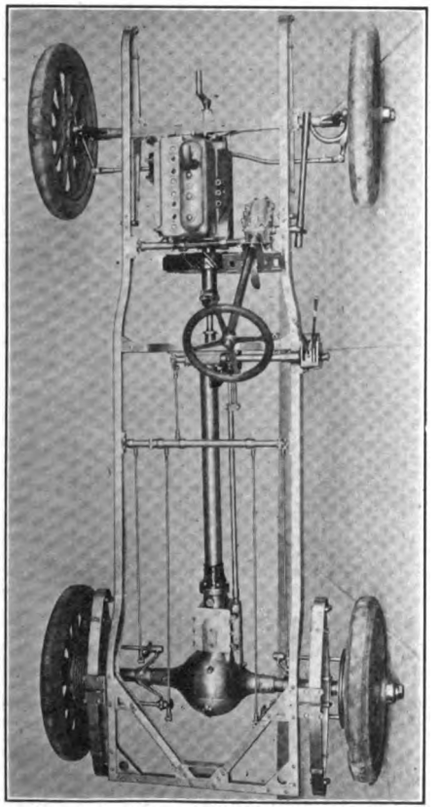


THOMAS BLOCK MOTOR

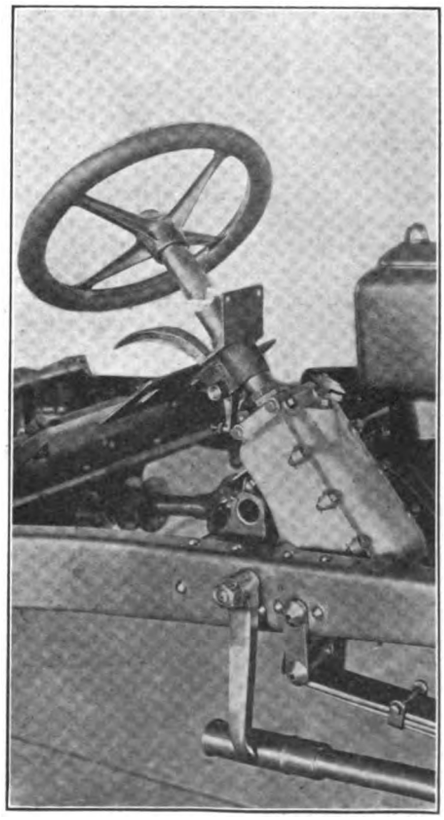
The base casting is supported on a tubular hanger running across the car just over the crank shaft in the rear and at a single point below the radiator seat in front, making a three-point support of the most approved pattern. The crank shaft is supported on two annular ball bearings, and the two-to-one gears in front are completely housed in the case, as is the additional gear which drives the Bosch high tension magneto—the only means of ignition provided.

The regular type of triple-disc clutch which is a feature of Thomas design is employed in this case, the fly wheel having fan blades cast in its periphery to aid in cooling the motor and providing the only draught which is required for the purpose. Back of the clutch is a single universal joint inside a yoke which carries the combined shaft casing and torque tube. The change gear group is mounted on the bronze housed rear axle and as the accompanying view of the chassis shows, the only external parts are the tube and the gear-striking and brake rods. The latter extend to the double internal brakes. Of these, the emergency set are expended within drums provided outwardly with air-cooling flanges, which serve to keep down the working temperature when long-continued service is demanded of them.

Another feature of the chassis construction which tends to a reduction in repair bills is the method of mounting the steering gear, which is placed above the chassis line and in front of the dash board. In this position it is perfectly accessible at all times, and, as shown in the picture, may be dismounted without removing its housing from the frame, or may be adjusted and cleaned by simply removing the large cover plate which is placed in front. The same attention to detail which characterizes this feature is present throughout the vehicle, which may be repaired or adjusted entirely from above without the necessity of running it over a pit.



THOMAS TAXICAB CHASSIS



THOMAS STEERING GEAR

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AMMETER FOR TESTING THE COIL

Novel Method Suggested for Improvement of the Timing—How Trembler Lag Affects the Spark.

It is only recently that the attention of the motoring public has been called at all closely to the more intimate details of the action of the ignition system. Beginning with the development of the idea that the relative "fatness" of the spark had little to do with the effectiveness of the ignition, it has been shown that there are many matters in connection with the operation of the ordinary jump spark, to say nothing of the magneto systems, which even yet are but little understood. In this connection, a foreign ignition specialist has recently placed on the market an ammeter of special construction which is designed for the specific purpóse of adjusting the coil with regard to economy of action and uniform regulation of the timing.

As is well known, the action of the common vibrator coil is always subject to a greater or less amount of lag representing the very small increment of time between the closing of the primary circuit and the instant when the first induced spark passes the points of the plug. This lag varies with the temperature of the coil and also with the amount of current being sent through it. Furthermore, it is apparent that with even a very slight variation in the adjustment of the several vibrators of a multiple coil a considerable variation in the distribution of the secondary takes place, which must serve to alter the timing of the explosions to a considerable degree.

By way of determining the actual performance of the coil with absolute accuracy, a special device has been employed which consists primarily of a commutator so contrived that the angular length of its contact can be altered. On the same shaft, a high tension finger is located, which travels close to the face of a stationary disc which is graduated into 360 degrees. When the low tension circuit is closed, the high tension spark jumps the gap between the finger and the disc, the point of action being clearly observable. Such an apparatus was used in a series of experiments performed some little time ago, in which the subject of trembler lag was investigated and a number of new points developed. Its use in this connection was to establish certain standard relations between the consumption of the coil and the position of the first spark to pass the gap at the plug, considered with relation to piston position. The following table, taken with an arc of commutator contact 52 degrees in length, shows the amount of variation in timing which may be brought about by differences in trembler adjustment:

Consumption at rest. Amps.	Consumption running Amps.	Revs. of commutator shaft.	Position of first spark.
.75	.6	264	2°
.75	.6	932	12°
.75	.6	2,464	36°
1.0	.7	264	5°
1.0	.7	932	16°
1.0	.7	2,464	43°
1.5	.9	260	8°
1.5	.9	940	23°
1.5	.8	2,464	50°
2.0	1.1	264	12°
2.0	1.8	940	36°
2.0	1.2	2,460	60°

These observations of course apply only to the particular coil under test, and are probably quite different from what would be obtained from similar tests applied to typical American coils, or even to coils of the same make under different conditions of adjustment, and installation in the car. Nevertheless they serve well by way of illustration, and bring out the real point, which is that, variations in current consumption involve variations in the timing of the spark. Regarding the observations in question, the maker says: "Taking for instance a four-cylinder engine with 4-inch stroke (bore of no importance), and a quadruple coil. . . . . let the firing position at the retarded point be at the top of the stroke in the cylinder, and let each trembler be adjusted to .75 amperes (not running) for No. 1 cylinder, and 2 amperes No. 2 cylinder, 1.5 amperes No. 3 cylinder, and 2 amperes No. 4 cylinder, a general adjustment which we might mention in our experience is by no means uncommon: we have often come across quadruple coils running at varying consumptions from 1 to 4 amperes, so that in taking this particular instance we are taking an average. Then we have at, say, full advance (reckoning on a 60 degree full advance) at 932 commutator revolutions of 1,864 engine revolutions, No. 1 cylinder firing 1.15 in. from the top of the stroke, No. 2 cylinder .97 inches, No. 3 .82 inches, and No. 4 cylinder .575 inch, a position of affairs which is not likely to give one the sweetest running, and which is indeed most detrimental to the life of the instrument. More mysterious knocking is caused by this than one would imagine. Again, the use of a meter enables one to gauge to a nicety the proper and safe consumption for any type of coil, once the owner has been informed of the proper consumption which is best for all-round purposes. This consumption, whatever it is, can be checked periodically, especially when any alteration to the adjustment is made in the manner of filing of the platinum points, replacing of screws, blades, or armature, when it becomes difficult to most people to adjust the tremblers to give the best results. The use of an ampere meter will decrease this work very considerably.

"One cannot accurately by the sound of the trembler, nor yet by the appearance of the spark, tell if a section is performing its work properly. A good strong buzz is as likely as not due to the fact that the consumption is high, or, in other words, that the tension of the armature spring or platinum blade is too great. The appearance of the spark also is very deceptive. The length of the spark may remain about the same, but its fatness and heat may be considerably increased, and yet to the unpractised eye appear approximately the same. This will show that a meter is a most necessary factor for determining the coil output.

"One of the dangers of a coil consuming too much current is the general melting of the insulation both contained in the bobbin and surrounding it, resulting in a considerable attenuation of the spark, which from that time forward cannot be rectified. This attenuation is given in the figures as under:—

Continuous consumption 2½ amps.
Starting temperature reading of thermometem 18.6° Cent.

Time.	Temperature of wax	Length of spark.
Zero	18.6°	15 mm.
½ hour	25.2°	14 "
1 "	wax melting.. 32.4°	14 "
1½ "	" " .. 36.2°	14 "
2 "	" " .. 38.3°	14 "
2½ "	" " .. 41.4°	13.5 "
3 "	" melted .. 44.3°	13.5 "
3½ "	" " .. 47.6°	13 "
4 "	" " .. 49.4°	13 "
4½ "	" " .. 50.0°	13 "
5 "	50 C., end of graduation	.12 "
5½ "	" " " " "	...12 "
6 "	" " " " "	...12 "
6½ "	" " " " "	...12 "
7 "	" " " " "	...11.5 "
7½ "	" " " " "	...11.5 "

"This test was carried out by embedding into the insulation of the wax surrounding the bobbin an ordinary Centigrade thermemeter."

While it is evident that to the ordinary user the ammeter may not be of great value as applied directly to the tremblers, still it is likely that by inserting the instrument in the primary circuit with the motor at rest and turning over the commutator from contact to contact, adjusting the tremblers to give the same consumption in each case, a much closer approach to synchronism might be obtained than is possible with the ordinary means of adjustment by eye and ear alone. So far as is known, the idea is entirely novel, and though the difference in consumption between stationary and running conditions is not exactly the same for all speeds, it is nearly so, and with vibrator springs of uniform temper, should vary but little in any given coil.

About Blanketing the Radiator.

It is all well enough to cover the bonnet of the car with a robe or blanket during cold weather, when it is necessary to leave the motor for some little time without withdrawing the water from the cooling system. It should be remembered, however, that the protection against cold also is a protection against the radiation of heat, and care should be taken not to run the motor for more than a moment or two with the bonnet covered in this way as otherwise serious overheating may result.

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The Week's Patents.

870,666. Vehicle Brake. De Witt Cookingham, Cleveland, Ohio, assignor of one-half to John H. Hertner, Cleveland, Ohio. Filed June 23, 1906. Serial No. 323,023.

1. In a vehicle brake, a brake frame and brake shoes adapted to frictionally engage said frame, a member on which the said shoes are pivotally supported, means for forcing the shoes into engagement with the brake frame, said shoes being wholly incased, and means accessible from the exterior of the incasing structure adapted to move the shoes toward the brake frame at the pivotal points.

870,794. Steering Mechanism. Harry E. Norris, Arnold, Ohio. Filed Dec. 12, 1906. Serial No. 347,487.

1. In a steering mechanism, the combination with the connecting bar of the wheel axles, of a plate secured to said bar provided with outwardly projecting sleeves, pins mounted in said sleeves carrying anti-friction rollers and a worm wheel carried by the main axle meshing with said rollers for the purpose described.

870,795. Speed Indicator. Ed C. Oliver, Minneapolis, Minn., assignor to Harry E. Pence, Minneapolis, Minn. Filed Nov. 13, 1906. Serial No. 343,238.

1. In a speed indicating device, the combination, with a rotating spindle, of a weight centrally pivoted thereon and having a cam surface, a spring, a lever bearing on said spring and on said car surface, the effective leverage of the spring on the cam varying with the speed of rotation.

870,796. Tire Protector. Russell Parker, New York, N. Y. Filed Nov. 22, 1905. Serial No. 288,545.

1. A tire protector having a free edge with a limiting device to restrict its diameter, the other edge being unrestrained to allow the protector to be slipped over the tire and to be drawn tight at individual points, and a number of holders extending from the other edge of the protector and adapted for connection with the wheel.

871,032. Means to Record the Speed of Automobiles. William A. Cheesebro, Los Angeles, Cal., assignor, by direct and mesne assignment, of one-third to David E. Lyons and one-third to William H. Sheasby, Los Angeles, Cal. Filed Jan. 25, 1906. Serial No. 297,845.

1. The combination with a drum, means for rotating the drum, and means for carrying a record sheet upon the drum, of a drive shaft, a governor on said drive shaft, a grooved support carried by the drive shaft, said support having a longitudinal movement on the shaft, a record marker carrying rod slidingly supported in bearings and having a fork on its inner end which engages the grooved support connected with the governor, a marker supporting bracket mounted on the marker carrying rod, a record marker secured to said bracket, and a spring rigidly secured at one end to the marker carrying rod and coiled around the latter with its free end resting upon the projecting end of the holding bracket.

871,098. Means for Driving Motor Road Vehicles. Martin Albrecht, Friedberg, Germany, assignor to Felten & Guilleaume-Lahmeyerwerke Actien-Gesellschaft, Frankfort-on-the-Main, Germany. Filed Feb. 20, 1907. Serial No. 258,468.

1. In a motor car, the combination of a plurality of independent driving wheels, a prime motor, an electric generator, differential gearing connected with one element of said generator, and with two of the driving wheels, and electric motors adapted to be energized by said generator and arranged to drive others of said wheels.

871,108. Transmission Gear for Motor Lorries and other Vehicles. Adolphe Clement, Levallois-Perret, France. Filed March 16, 1905. Serial No. 250,468.

In a motor vehicle, an axle for the driven wheels, a differential gear mounted outside of the axle, a longitudinal driving shaft connected to the driving pinion of the differential gear by a universal joint and connected to the main shaft by a universal joint and a pair of stays connected to said axle near its ends and converging to the center of the vehicle and connected by a universal joint to the frame of the vehicle.

871,109. Steering Mechanism for Motor Cars. George H. Coates, Worcester, Mass. Filed March 28, 1904. Serial No. 200,264.

1. In a steering mechanism for motor vehicles, the combination with a rotating shaft, of an inclosing case for said shaft consisting of a straight section and a curved section capable of rotating about an axis coincident with the axis of said straight section, a joint between said straight section and said curved section, and means for locking said curved section at any point in its movement about said straight section.

871,134. Carburetter. Joseph G. P. M. Monnier and Antoine M. Morin, Boulogne-sur-Seine, France. Filed March 13, 1906. Serial No. 305,839.

1. In a carburetter, an atomizing chamber having a conical shape at its lower end, and an air inlet at its bottom, a nozzle extending through the lower conical portion, and an inverted hollow apertured mixing cone having an open lower end situated over the nozzle, said atomizing chamber having auxiliary air inlet ports in its side opposite said mixing cone.

871,159. Tire. Winthrop D. Baker, Brockton, Mass. Filed July 16, 1906. Serial No. 326,421.

1. A resilient tire constructed in ring-like sections, each of which is provided with a base enlargement producing retaining lugs adapted for reception in the rim of a wheel, a rubber core threaded through said sections, tie wires also threaded through said sections and adapted to secure said sections together, a wheel rim constructed in sections mounted to slide transversely with relation to each other and adapted to grip the retaining lugs of the tire sections, and bolts extending transversely from one section of the rim to the other and through the base enlargement of the tire sections, whereby to bind the two sections of the rim together and to assist in holding the tire sections in the rim.

871,169. Pneumatic Tire. Frederic C. Hood, Boston, Mass. Filed June 11, 1906. Serial No. 321,229.

In combination, a rim having a substantially flat surface and a permanent retaining flange on one side, a removable flange on the opposite side, inwardly extending projections having inclined faces at the junctions of the flanges and rim, said projections serving to brace said flanges, bolts passing across the face of the rim and through said projections and connecting the permanent and removable flanges, and a resilient tire seated on said rim and confined between said flanges, said tire having transverse grooves to receive the bolts and corner recesses to receive the lugs, substantially as described.

871,786. Pneumatic Equalizer for Vehicles. Chaim Rosenzweig, New York, N. Y. Filed April 28, 1906. Serial No. 314,117.

1. In a vehicle having a steering portion, the combination of two members arranged one above the other, hollow cushions interposed between said members at each side of the carriage, and means controlled by the movement of the steering portion of the vehicle for admitting fluid to the cushions on one side of the carriage or the other whereby such side may be raised relatively to the other side.

871,233. Changeable Speed Gearing. Albert L. Muren, Belleville, Ill. Filed Oct. 25, 1906. Serial No. 340,541.

1. In a changeable speed gearing, the combination of a driven shaft, a longitudinally shiftable clutch member having an internal gear and a sleeve whereby it is mounted on said shaft and having driving connection therewith, a plurality of sleeved gear members, either of which is adapted to co-operate with the internal gear of said shiftable clutch member, and means for driving said gear members singly, substantially as set forth.

871,237. Shock Absorber for Vehicles. Duncan Robinson, Brookline, Mass. Filed Dec. 12, 1906. Serial No. 347,458.

1. In a shock absorber for vehicles, the combination of a circularly movable spring controlled ring connected with the running gear, a pair of volute springs attached thereto at opposite sides of its center, and means connecting the outer ends of said springs with the vehicle body, substantially as described.

871,297. Vehicle Wheel. Nicholas Schenk, St. Louis, Mo. Filed June 29, 1906. Serial No. 324,066.

1. A vehicle wheel comprising a hub, a rim, inflated tubes located between the hub and the rim and roller bearings between the tubes, substantially as specified.

871,320. Carburetter. Leon Bollee, Le Mans, France. Filed Aug. 3, 1903. Serial No. 168,007.

1. A vaporizer for liquid hydrocarbons, comprising a number of hydrocarbon inlets, a separate air inlet to each hydrocarbon inlet, a common outlet pipe and means for cutting off one or more of the pairs of hydrocarbon inlets and air inlets simultaneously as described.

871,329. Shock Absorber for Motor Cars. Arthur Dutrieux, Le Quesnoy, France. Filed July 16, 1906. Serial No. 326,471.

1. In combination with the supporting spring and body of a vehicle, a sector shaped chamber on said body, a swinging pallet in said chamber having a number of passages therein, a yielding plate secured to said pallet near its center of movement and provided with holes opposite some of said passages but closed opposite others, and means connecting said spring to said pallet whereby the latter is caused to swing in correspondence with the bending of the former, substantially as described.

871,351. Resilient Vehicle Wheel. Chas. J. Malings, Elyria, Ohio. Filed July 30. 1906. Serial No. 328,302.

1. A resilient vehicle wheel, consisting of a hub and rim portion provided with a series of guide lugs, and a series of telescoping spring-resisted spokes pivotally mounted and secured within said guide bars.

871,404. Tire. William A. Heller, Akron.

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Ohio. Filed Feb. 9, 1907. Serial No. 356,587.

1. The combination with a wheel of a pneumatic tube arranged on the rim thereof and a casing arranged to inclose said pneumatic tube, said casing comprising a bottom or tread portion, a side portion formed integral therewith, a side portion detachably secured to said tread portion and consisting of a number of independent plates, ears formed on said detachable plates and on the integral side plate, lugs formed on the rim of said wheel and pins passing through said ears and between said lugs, substantially as described and for the purpose set forth.

871,460. Rim for Vehicle Wheels. Ernest D. Valentine, Akron, Ohio. Filed Aug. 17, 1906. Serial No. 331,048.

A separable rim for vehicle tires comprising as one of its elements an annular band of suitable width, provided along one side with tire engaging means and further provided with a relatively wide shallow rabbet in its outer surface, a plurality of pins positioned within said rabbet and extending outwardly therefrom a distance not exceeding the depth of said rabbet, a second element arranged to co-operate with said first element to constitute in connection therewith a tire retaining rim consisting of an annular band having a tire engaging means along one side with a rabbet cut in its under face corresponding in contour and size to the rabbet in said first element and adaptedto fit therein, said second element being further provided with a plurality of slots formed in the rabbeted portion thereof, said slots being partially obliquely and partially circumferentially formed and so positioned as to receive the pins on said first element and form a detachable interlocking engagement therewith, and a threaded pin arranged to engage in a threaded opening in said first element, said pin being provided with a projecting end arranged to enter an opening appropriately positioned in said second element whereby said elements are secured against unintentional dislodgment.

871,464. Carburetter. Carl C. Walter, Philadelphia, Pa. Filed Sept. 7, 1905. Serial No. 277,373.

1. A carburetter provided with a fluid fuel feeding piston and its cylinder, an air valve having a stem provided with a retarding piston, a cylinder co-operating with the end of the valve stem and having connections to the first mentioned cylinder, a cylinder co-operating with the retarding piston, and means for creating variable pressure in the last mentioned cylinder, substantially as described.

871,481. Vehicle Wheel. Richard F. Corwin. Grand Rapids, Mich. Filed Oct. 22, 1906. Serial No. 340,103.

1. In a vehicle wheel, a metallic casing open at the inner periphery and having flanges projecting inward and small bolts passing through them, a felly between said flanges and having large holes therethrough to receive the small bolts, a pneumatic tube within the inclosure formed by the felly and the metallic casing, and an intermediate fabric casing woven of elastic warp and non-elastic woof and placed around the pneumatic tube within the metallic casing.

871,506. Resilient Tire. Isaac W. Hodgson, Minneapolis, Minn., assignor of one-half to Edgar J. Hodgson, Minneapolis, Minn., and one-fourth to Philip W. Herzog, St. Paul, Minn. Filed Oct. 12, 1906 Serial No. 338,652.

1. A resilient tire comprising an inner rim, a plurality of tread sections, links arranged in a plane approximately parallel to the plane of the connected tread sections and yieldingly connecting the tread sections in an endless series around said rim with freedom for movements in the plane of the wheel and transversely thereof, and a multiplicity of coiled springs compressed between the said rim and tread sections and exerting outward pressure thereon, substantially as described.

871,515. Vehicle Wheel. William C. Mullen, Pomona, Cal., assignor of one-half to John A. Henjum, Pomona, Cal. Filed June 19, 1906. Serial No. 322,471.

1. The new or improved vehicle wheel consisting of a hub, spokes, felly and inner tire, said tire having radial tubes screwed into and firmly held herein, an outer metallic tire whereinto radial and inwardly projecting pins are fastened, part of each of which pins pass through each of the said tubes, and the outer part of which pins pass through soft india rubber pads situated between the inner and outer metallic tires, the inner end of each pin being provided with screw nuts for securely fastening the outer tire, the inner tire, the felly, and pads together, the outer tire having a casing of soft vulcanized india rubber incasing it on the tread and at the edges, and held in place by tension wires passing circularly through the soft india rubber casing, substantially as hereinbefore described.

871,575. Tire Protector. William T. Dorgan, Peoria, Ill., assignor to William J.

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Wiskes and Arthur D. Eddy, Saginaw, Mich Filed Feb. 11, 1907. Serial No. 356,841.

1. A tire protector comprising a sheath of suitable material, approximately semi-circular in cross section, the edges of said sheath being formed with a bead of elongated cross section, said bead being curved on its inner surface and adapted to grip the tire with the edge of the bead.

871,632. Internal Combustion Engine. Arthur Rollason, Long Eaton, England. Filed May 2, 1907. Serial No. 371,520.

1. In a six-stroke cycle internal combustion engine having an additional scavenging valve, a combustion chamber or clearance space having part thereof placed towards one side of the cylinder out of line with the piston and inlet valve, substantially as described.

871,636. Means for Cooling Heated Surfaces. James H. Sager, Rochester, N. Y. Filed Jan. 19, 1905. Serial No. 241,906.

1. In a cooling device the combination with the body to be cooled, of ringlike flanges, encircling said body and attached thereto, at intervals, each of said flanges having one or more perforations that register with those in the adjacent flanges, and also having tubes around said perforations in an adjustment flange.

871,678. Steering Gear. David M. Dearing, Jackson, Mich., assignor of one-half to Louis F. Boos, Jackson, Mich. Filed Feb. 19, 1906. Serial No. 301,892. Renewed April 1, 1907. Serial No. 365,858.

1. A steering gear for vehicles comprising a frame having a reach bar thereon, a front steering axle, a pivoting and cushioning device for said axle upon the front of said reach bar, a guide, and a semi-circular bar engaged with said guide and having its ends connected to said axle at equi-distant points from its pivot.

871,741. Double Carburetter for Explosive Engines. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed March 14, 1907. Serial No. 362,313.

1. The combination with a plurality of carburetters or vaporizers, of a union having an outlet and provided with a chamber and with separate passages leading from said carburetters to the chamber of said union, and a valve in the said chamber of said union, said valve having separate passages therethrough and being adapted to be moved to different positions to cause the outlet passage from the chamber of said union to be placed in communication with either or both of the said passages from the carburetters.

871,753. Variable Speed Driving Mechanism. Nils Christenson, Lynn, Mass., assignor to Calvin B. Tuttle, Lynn, Mass.; Anna M. Tuttle and Helen M. Marsh administratrices of said Calvin B. Tuttle, deceased. Filed Feb. 25, 1904. Serial No. 195,156.

1. The combination with a driving and driven member, of a friction clutch, the clutch comprising non-fluid members, carried by the driving and driven members respectively, and means actuated by the driving member and at a speed lower than the speed of the driving member and means to operate said first means for causing a frictional engagement of the non-fluid clutch members.

871,775. Muffler. Frederick C. Blanchard and Ernest B. Crocker, Bridgeport, Conn., assignors to The Consolidated Safety Valve Company, a Corporation of Connecticut. Filed July 22, 1907. Serial No. 384,898.

1. In a muffler, a shell provided with an inlet and an outlet and a muffling element, inclosed in and substantially filling the shell, consisting of layers of apertured sheet metal laid parallel to the course of gases passing from the inlet to the outlet and formed with shelves standing out at an angle from the layers of sheet metal.

871,792. Turbine Engine. William J. Francke, Bridgeport, Conn. Filed March 5, 1907. Serial No. 360,664.

1. In an elastic fluid turbine, a casing having inlets and an exhaust, a wheel carrying peripheral buckets, and return buckets of U-shape adjustably secured to the casing sides and disposed to have one end lie adjacent said first named buckets.

871,811. Pneumatic Cushion. William C. McCullough, Bucyrus, Ohio. Filed July 13, 1906. Serial No. 326,129.

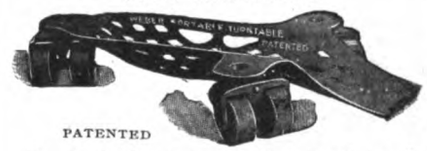
In combination with a vehicle axle and a body supporting spring, the herein described cushioning device comprising the pair of holders, each having an integral projection on its outer side, at its center, formed with an attaching flange, one of said attaching flanges secured on the axle and the other secured to the center of the under side of the spring, one of said holders having end guide lugs provided with guide openings, and the other having projections operating in said guide openings, and a cushioning body between the said holders.

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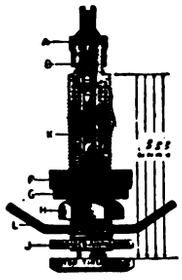
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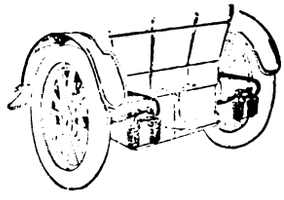
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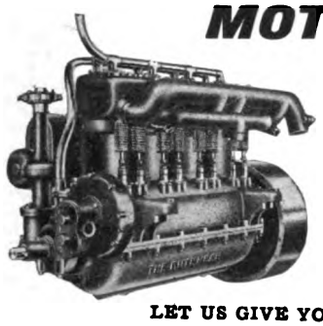
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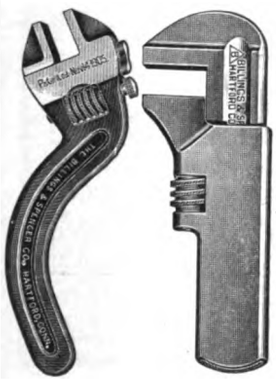
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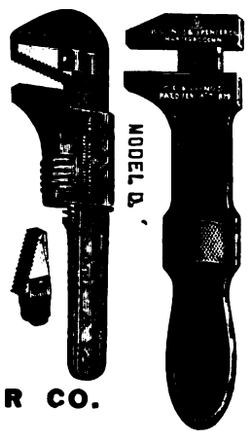
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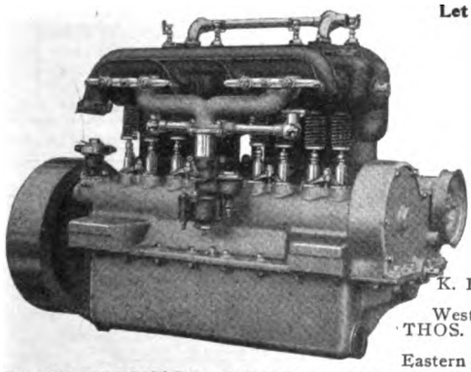


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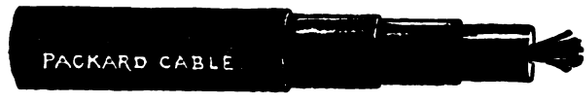
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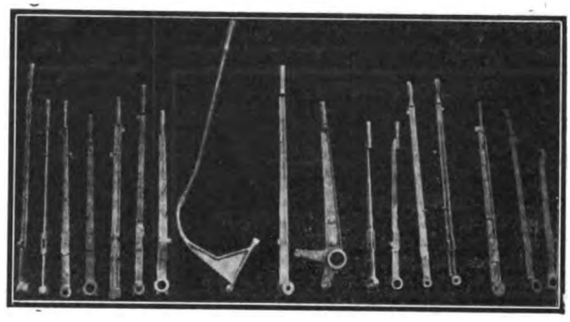


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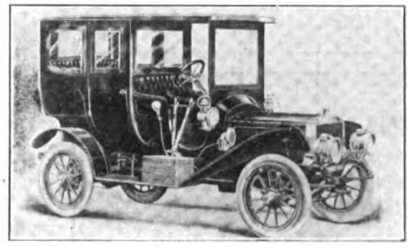
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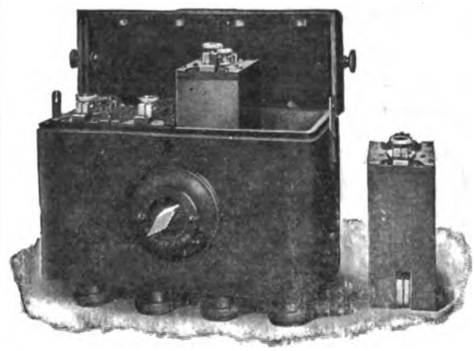
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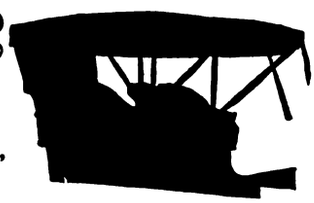
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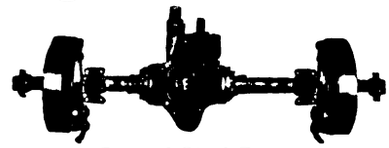
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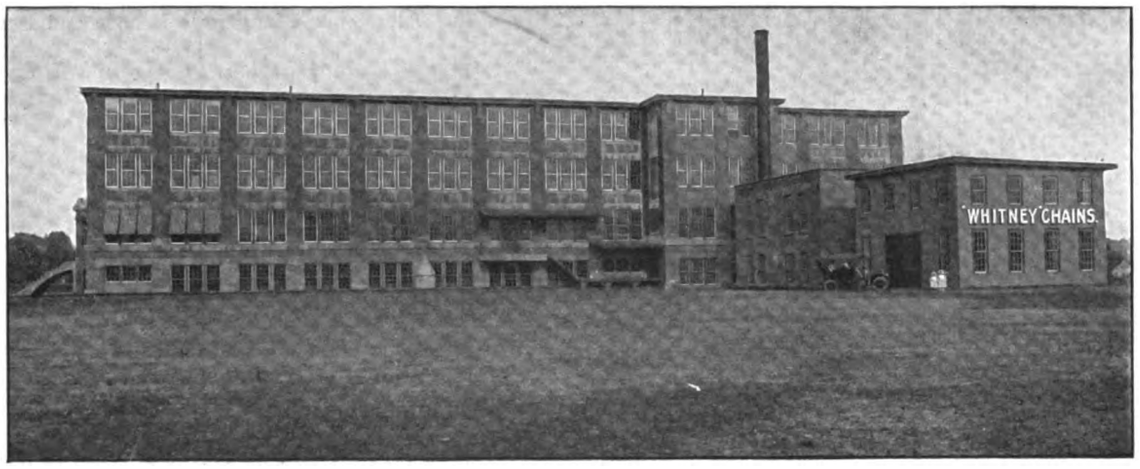
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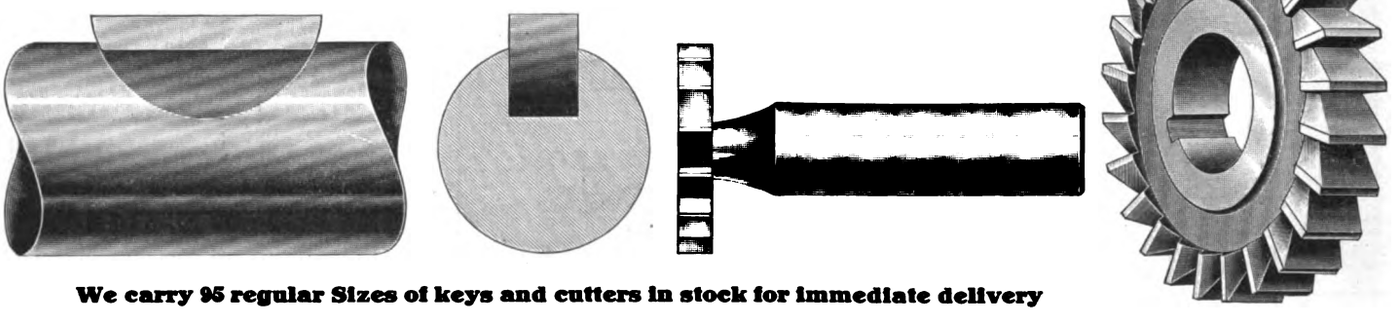
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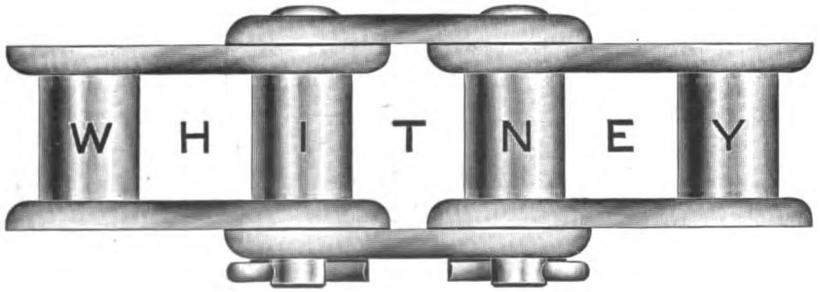


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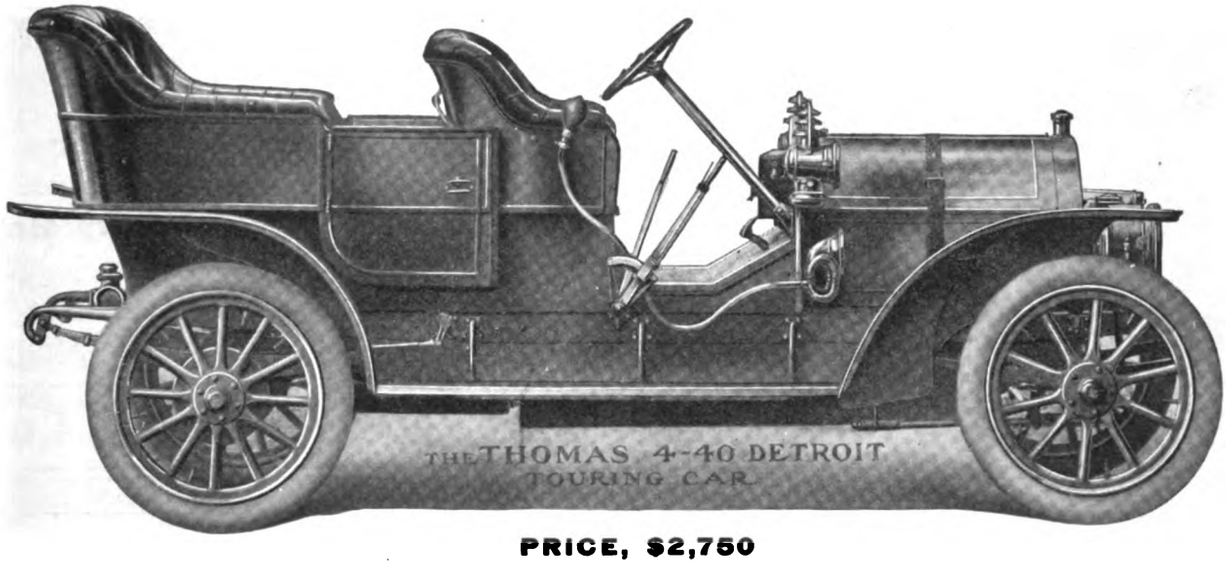


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THE BEST WAY TO FIND A GOOD THING IS TO LOOK FOR IT × WE HAVE A FIND IN THE AURORA RUNABOUT AT $700 AND $775. WILL YOU LOOK?

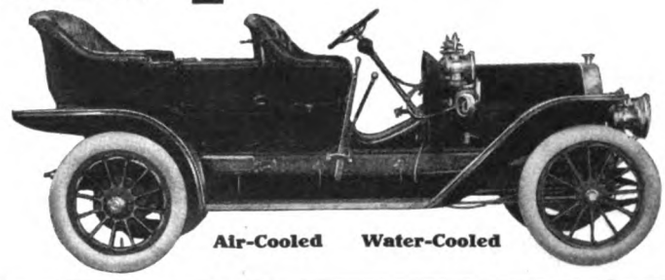
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The woman who once experiences the delightful ease of motion, the immunity from exhaustion, found only in the Marmon Car, will not easily be satisfied with anything else.

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Model H. Touring Car, 40-45 H. P., $3500
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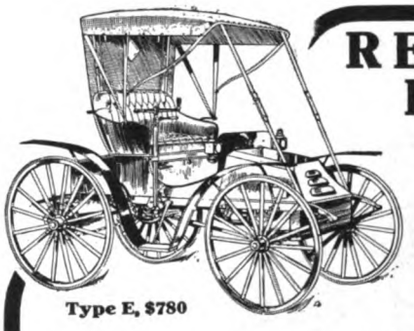
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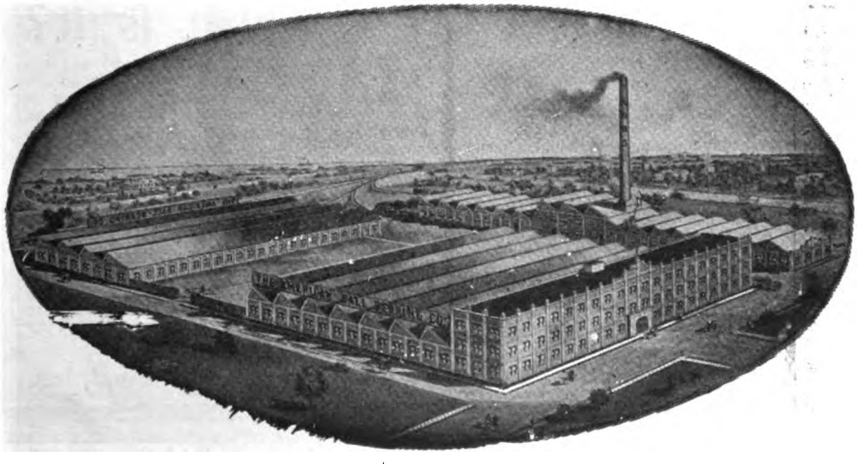


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NEVER, until this year of 1908, has there been a speed indicator sold at one absolutely fixed list price. Manufacturers have "named" a list price and some even required the dealers to sell at "that" price.

Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also — and the jobber cut the price.

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So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

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Pan-American Polish was awarded the Bronze Medal at the Louisiana Purchase Exposition at St. Louis, 1904. This polish has been carefully prepared for the Automobile trade. It is also applicable to the carriage trade, or can be used on any varnished furniture or woodwork of any kind. It will remove stains, cover scratches, leaves the automobile with its original new lustre, without being sticky or greasy.

It can be used on the leather seats or tops with the very best results. Can be used on any color or kind of varnish, from the clearest white to the darkest black.

Furnished in eight-ounce bottles. Guaranteed not to harm the finest varnish. For sale by all automobile dealers. Price, 60 cents per bottle.

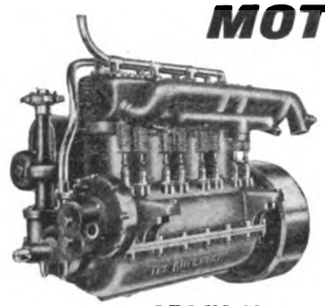
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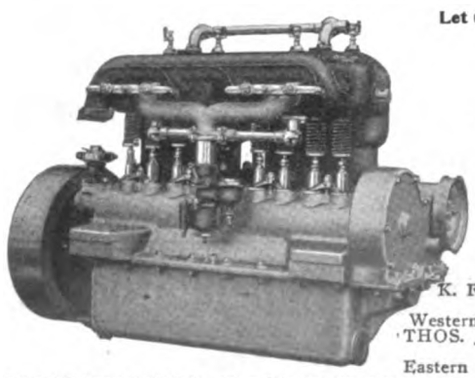
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Let us quote you on 4-cylinder motors for 1908

THREE SIZES
4¼ in. x 4½ in.
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4-cylinder with self-contained oiling system.

Motors are ready for coupling any standard magneto.

Our new factory and machinery enable us to guarantee quality and deliveries. Also clutches and transmissions. Send for catalogue.

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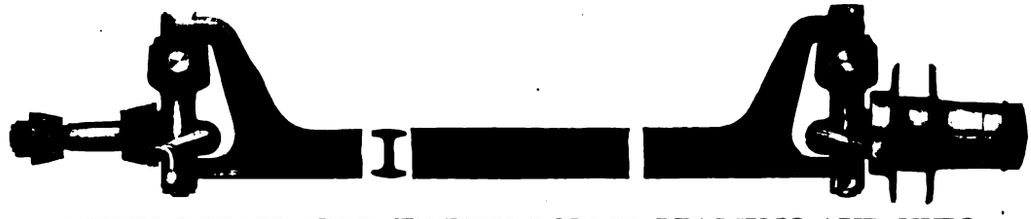
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The Heavier the Load the Greater the Saving

The first cost of TIMKEN equipment for Commercial Vehicles is out of all proportion to the resultant saving in up keep and increased earning power through added carrying capacity.



2-INCH I BEAM AXLE, TIMKEN ROLLER BEARINGS AND HUBS

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And that is the reason WHY the Successful Commercial Vehicle Builders use them.

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as applied to the

Rambler

is more than a mere phrase, it is a title earned through correct design and careful construction and proven by years of hard, constant service wherever power-driven vehicles are known.

The practical qualities that established the Rambler reputation are,—

1st—APPLIED POWER. By this we mean actual tractive force as applied to the road wheels. Owing to the straight line drive of the four-cylinder models and the direct chain drive in the two-cylinder cars, Ramblers have greater propelling force per pound than any other car on the market.

2d—DEPENDABILITY. Ramblers are built to stand the test of hard, daily service over the worst of American roads. This condition is not reached by mere weight and masses of metal, but by simple, scientific construction in which each element is stronger than the strains upon it can ever require.

3d—PRACTICAL ROAD VALUE. With the vast facilities of an enormous plant like the Rambler factory, skillfully directed to the production of two models only, greater value per dollar can be offered than is possible in a plant of lesser output.

In short, the Rambler is a car of

Power, Service and Value

Ordinary business policy dictates a careful examination of its many high qualities before ordering your new car.

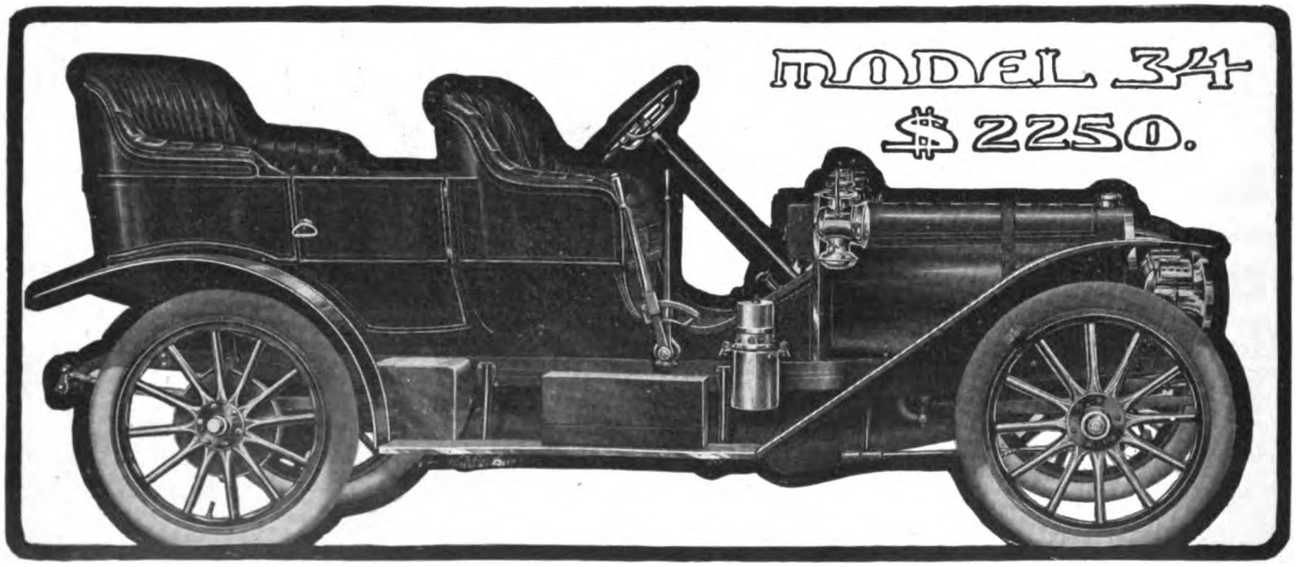
Our 1908 catalog fully describing two touring cars and a high-powered roadster is at your service: write to-day.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, February 6, 1908. No. 19

GOODHUE KNOX'S NEW PRESIDENT

Creditor-Stockholders Choose Chicopee Banker to Succeed Cutler—Reorganization is Now Complete.

The reorganization of the Knox Automobile Co., Springfield, Mass., finally was completed on Saturday last, 1st inst., when the officers selected by the committee previously appointed by the preferred stockholders—all of whom are creditors who accepted stock in payment of their claims—were formally elected by the new directors of the company. They are as follows:

President, Charles L. Goodhue; vice president, William E. Wright; secretary, Charles H. Beckwith; treasurer, Charles L. Goodhue; assistant treasurer, Albert E. Smith.

The directors, who previously had been chosen at a meeting of the stockholders, are as follows: Alfred N. Mayo, Charles L. Goodhue, Charles H. Beckwith, Peter Murray and Clarence E. Whitney, representing the creditors, and William E. Wright, W. H. Chase, M. J. Greenwood and H. W. Cutler, who represent the common shareholders who constituted the old company.

Charles L. Goodhue, the new president and treasurer, is a retired banker, who is a director of the Chicopee National Bank. It is known that E. H. Cutler, the former head of the company, earnestly desired re-election, but he was unable to muster sufficient support and so passes out of the concern's affairs. Messrs. Wright and Smith are the only representatives of the Cutler regime who were retained.

The Knox Automobile Co. assigned on July 22, 1907, with $975,000 assets, and $531,000 liabilities, and since that date has been in the hands of Alfred N. Mayo, the assignee. On December 1, the assignee issued $500,000 preferred stock, which was accepted by the creditors in full satisfaction of their claims. The preferred stock controls the assets and income of the company.

The reorganization of the concern was effected chiefly through the tact and ability of Assignee Mayo, who is treasurer of the Fisk Rubber Co.

Receivers for Coleman's Battery Company.

As a result of a petition in a suit in equity brought by Emma Coleman of Somerset, Va., George F. Keating and Edward R. O'Malley were, on Monday last, 3d inst., appointed receivers of the National Battery Co., of Buffalo, N. Y. The liabilities of the company amount to about $120,000. The assets are estimated at $425,000. The National Battery Co. was one of the relics of the long-defunct American Bicycle Co., or "bicycle trust," as it was better known, of which R. Lindsay Coleman, of New York City and Somerset, Va., was once president. When the trust went to smash, Coleman obtained possession of the Buffalo battery concern, of which he became president. He occupied that office until comparatively recently, when the title of chairman of the board of directors was created for him.

Bonebrake Plans Factory in Kansas.

The Bonebrake Hardware Co., which operates a string of stores in Oklahoma, with headquarters in El Reno, is planning to enter the automobile industry as a manufacturer. The first that was known of the matter was when Mr. Bonebrake entered into negotiations with the Chamber of Commerce of Wichita, Kan., with a view of obtaining a factory site in that city. The project does not appear to have advanced beyond that stage.

Cameron Buys Plant at Beverley.

The Cameron Motor Car Co., of Brockton, Mass., have purchased the brick factory of the Beverley Mfg. Co., Beverley, Mass., and is preparing to take possession at once. An output of 500 cars is in view for the 1908 season.

TRYING TO REVIVE THE TRIDENT

Undeterred by Personal Judgment, President Freeman strives to Secure Capital—Alluring Offer to Investors.

In the New York Supreme Court the Niagara Rubber Co., Lockport, N. Y., was last week awarded judgment for $7,500 against Albert Freeman, president of the Trident Tire Co., New York, who had bound himself personally to secure the contract entered into by the two concerns. It appears the Niagara company was engaged by the Trident people to make their tires, the New York concern agreeing to pay for the material, and also to pay 15 per cent. for the use of the machinery, the full amount of the labor and 25 per cent. profit to the makers.

The Trident company started with a splurge, but made no headway, and judgments have been piling up against it. Meanwhile, Albert Freeman, its president, is circularizing investors in an effort to obtain money to revive the company. His circulars set forth that he is interested in a "pneumatic tire which will revolutionize the tire industry," investment in which will be "not only guaranteed by a 6 per cent. first moragage gold bond, but that the stock, that you will receive as a bonus with the bond, will yield you an additional income of at least from 30 to 40 per cent. per annum."

Dry Cell Makers Decide to Quit.

The Ampere Manufacturing Co., makers of dry batteries, at 408 West Thirteenth street, New York, has applied, through its directors, Leopold Polock, president, and Nathan Friedman, treasurer, to the Supreme Court for a voluntary dissolution of the corporation, which was incorporated March 28, 1907, with a capital stock of $5,000. To wind up its affairs Marcel Levy has been appointed receiver, with a bond of $2,000. The liabilities are $1,727 and assets $1,283.

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THE WEEK'S INCORPORATIONS.

Boston, Mass.—Crown Motor Vehicle Co., under Massachusetts laws, with $50,000 capital. Corporators—W. A. Shafer and F. Dodge.

Wilmington, Del.—Motor Omnibus Co., The, under Delaware laws, with $45,000 capital. Corporators—H. L. Rice, E. S. Hellings, W. M. Pyle, Wilmington.

Chicago, Ill.—Parsons, Curtis & Co., under Illinois laws, with $10,000 capital; to deal in automobiles. Corporators—C. H. Parsons, A. W. Curtis, and F. A. Bean.

Boston, Mass.—Graham's Automobile Spring & Appliance Co., under Massachusetts laws, with $50,000 capital. Corporators—J. A. Watson, president; J. A. Watson, treasurer.

Auburn, Ind.—McDowell Motor Vehicle Mfg. Co., under Indiana laws, with $20,000 capital; to manufacture automobiles. Corporators—Willis McDowell, Wheeler McDowell, and A. W. McDowell.

New York City, N. Y.—P. & H. Tire Co., under New York laws, with $20,000 capital. Corporators—Roger G. Howell and Edward Tabor, 1657 Broadway; Paul M. Pelletreau, 3 Broad street, New York City.

New York City, N. Y.—General Taximeter Co., under New York laws, with $5,000 capital. Corporators—Alfred Ely, 37 Madison avenue; James T. Riddle, 246 Manhattan avenue; Robert S. Kearney, 31 Nassau street, New York City.

Hutchinson, Kan.—Taylor Motor Co., under Kansas laws, with $10,000 capital; to maintain garage and deal in automobiles. Corporators—Dr. H. G. Welsh, T. J. Templar, L. A. Bunker, H. H. Taylor, and W. Y. Morgan.

New York City, N. Y.—Comet Motor Trucking Co., under New York laws, with $150,000 capital. Corporators—Leslie B. Sanders, 165 West Eighty-second street; Arthur W. Harrell, 503 West 148th street; Otto Bluhm, 23 Liberty street, New York City.

New York City, N.Y.—Wyatt & Listman, under New York laws, with $4,000 capital; to make automobile parts. Corporators—James M. Wyatt, Hotel Gregorian; John B. Haskin, 34 West Eighty-sixth street; Herbert E. Listman, North Arlington avenue, East Orange, N. J.

New York City, N. Y.—Marko Storage Battery Co., under New York laws, with $5,000 capital; to make storage batteries. Corporators—Paul M. Marko, 1231 Bedford avenu; Herman Matfield, 207 Troy avenue, Brooklyn; Charles Standt, 517 Angelique street, West Hoboken, N. J.

Woman Starts Cut Rate Repairing.

Enter the cut-rate repair lady! According to advices from Trenton, N. J., she is Mrs. Clark Fisher, widow of a wealthy anvil maker, who attracted attention two years ago by assuming control of her deceased husband's large business and increasing it to almost double its former volume through her personal efforts. Her latest departure has caused Trenton garage owners to prick up their ears by the announcement that she will devote a portion of her immense plant to the repairing of automobiles at cut prices.

Mrs. Fisher declares that she has been prompted to do this because of the exorbitant prices she has been obliged to pay, both in this country and abroad, for the slightest repairs to her car. She believes that the garage owners "have combined and are practising extortion on the automobilists."

It is this fact, she states, and also a feeling of philanthropy that has caused her to start a movement against high garage charges in Trenton, at any rate. The anvil business, having recently become slack, Mrs. Fisher was troubled about some of her employes, a few of whom have not missed work at the works for 67 years, when the plant was started. So, instead of being compelled to lay them off for a period Mrs. Fisher decided to start in the cut-rate business and keep them busy during the winter. As the plant has an abundance of machinery she is well able to begin operations at once.

The machine shop will undergo a few changes to prepare for the automobile work it is expected to receive. Harold Fisher Brooks, late of the Standard Motor Construction Co., of Jersey City, has been engaged as the head of the automobile repairing department. Trenton's garage owners have not yet been heard from, as to whether they will meet Mrs. Fisher's reductions.

Standard Sizes Adopted for Tubing.

While it was known several months ago that the mechanical branch of the Association of Licensed Automobile Manufacturers had taken up the subject of the standardization of tubing used in automobiles, the results of the endeavor was only this week made public.

The object of the research was to secure a high quality of steel with a maximum of strength and to reduce the number of sizes as much as possible so that deliveries could be more quickly made by the tube manufacturers, who have been required to supply about 1,200 sizes of steel tubes of varying diameters and thicknesses.

As the outcome of the conferences held by the leading experts of the various interests concerned, the number of sizes has been reduced to about 300. Charts have been made of these standard sizes and furnished to the draughting room of each member of the association, giving a schedule of the standard stock sizes of all steel tubing made.

The benefits to be derived from this standardization are obvious: the reduction in weight in a car, the uniformity of sizes used by the various makers, the placing on the open market of certain standard sizes for all cars and the possibility of making quick deliveries to the manufacturers, thus reducing the cost of construction.

IN THE RETAIL WORLD.

The St. Nicholas Avenue Garage, New York City, has increased its capital stock from $10,000 to $50,000.

The Miller Motor Car Co., which has conducted a garage at Seventh and Wisconsin streets, Racine, Wis., is preparing to enlarge. To this end a commodious one-story concrete garage will be erected on Main street.

Fire of unknown origin gutted the Lowell Automobile Co.'s garage at Appleton street and Post Office avenue, Lowell, Mass., Monday night, 27th ult. Several cars were destroyed and others damaged. The total loss will not exceed $25,000, that to the building amounting to about $5,000.

W. A. Richwine has withdrawn from the Hiland Automobile Co., Pittsburg, of which he has been manager since its formation, and with A. H. Sarven will form the Diamond Automobile Co. The new company will be established in East Liberty, Pittsburg, where Buick cars will be handled.

A garage will be opened at 23 Sherman street, Hutchinson, Kan., by the Taylor Motor Co., which has just been incorporated. Besides conducting a general garage business the company will handle accessories and Ford cars. Dr. H. G. Welsh is named as president and H. H. Taylor secretary and manager.

Fire in the two-story frame building at 110-114 Exchange street, Providence, R. I., January 28th, caused a loss of $20,000, several automobile firms sustaining losses. The Flint Motor Car Co. lost several cars, and machinery valued at $16,000. The Autocar repair shop was damaged to the extent of $500. Among the other losers were Adams Brothers, who conducted a machine shop and J. M. Baker, a pattern maker.

More Facilities for Spring Manufacture.

Having passed through the period of financial depression without reducing their force or number of working hours, the Cleveland-Canton Spring Co., who have made extensive investigations of the merits of vanadium steel for automobile springs, have added another building to their plant at Canton, O., for the sole purpose of handling their increasing volume of orders. In the new building springs made from this material and other high grades of spring steel will be heat-treated in furnaces fitted with pyrometers especially designed for this work, securing a uniform tempering of all springs. There also will be a new testing machine installed. Incidentally, improvements have been made in the fitting of springs by the employment of a patented rolling machine which is to be used exclusively by this company.

Regal to Make Taxicabs, Too.

The Regal Automobile Co., Detroit's newest acquisition, will include taxicabs in its productions. The company has acquired a location at Beaubein and Twombly streets.

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GROWTH OF AMERICAN EXPORTS

Increase of $1,347,786 for the Year 1907—Gains in Every Geographical Division Except Mexico and Africa.

During the twelve months of the year 1907, America's export trade in automobiles increased exactly $1,347,786. The statistics, which just have become available, show that the total business amounted to $5,756,972, as against $4,409,186, and $2,695,655 for 1906 and 1905, respectively. The number of complete cars exported was 2.894, valued at $5,120,963, leaving $636,000 in round numbers, representing the valuation of parts.

This upward trend has been distinguishable throughout nearly the entire world. Only two individual exceptions—those of Mexico and Africa — being observed. The falling off from 1906 in the first instance amounted to $88,700 in round numbers, while African trading dropped only $7,906 last year. On the other hand, the United Kingdom has shown its appreciation of the American product by purchasing over $600,000 worth more of automobile products in the year just closed than during the year before. British North America comes second, with a growth of $288,500, nearly, and France next in order.

During the closing month, December, 173 cars, valued at $259,341, were exported, the total exports, including parts valuation amounting to $301,432. The returns for December, 1906, amounted to $242,154, the closing month of 1907 thus showing an increase in business of almost $60,000. Eight of the divisions recognized by the Bureau of Statistics at Washington, revealed gains, the United Kingdom leading with an appreciation of $40,000, or thereabouts, while the West Indies and Bermuda jumped up no less than $33,000. Of the six divisions showing losses, France led with $22,200.. The report in detail follows:

	December		12 Months Ending December		
	1906	1907	1905	1906	1907
Cars, carriages, other vehicles, and parts of:—					
Automobiles and parts of	.....	.....	$2,695,655	*$2,356,110	.....
Automobiles†	$181,882	$259,341	.....	1,792,308	$5,120,963
Parts of	60,272	42,091	.....	260,768	636,009
Exported to—					
United Kingdom	27,647	66,808	707,045	1,138,264	1,738,488
France	30,767	8,564	269,703	336,273	596,450
Germany	4,033	5,064	105,457	132,214	175,250
Italy	10,378	12,500	163,978	251,636	255,160
Other Europe	6,923	15,921	240,379	214,119	288,211
British North America	31,613	21,791	537,588	878,885	1,167,355
Mexico	39,243	56,691	192,452	717,523	629,807
West Indies and Bermuda	10,802	44,248	151,859	240,989	293,885
South America	24,503	23,533	60,419	166,814	244,466
British East Indies	1,279	30	31,793	34,111	35,586
British Australasia	45,552	38,289	120,083	192,668	213,645
Other Asia and Oceania	7,099	7,847	63,577	79,542	99,009
Africa	.....	146	39,288	16,100	8,194
Other countries	2,315	.....	12,034	10,048	11,466
Total automobiles, and parts of..	$242,154	$301,432	$2,695,655	$4,409,186	$5,756,972

* Figures are for six months, January to June, 1906.
† Number not stated prior to July 1, 1906.

Carnival Fund Passes $6,000 Mark.

At a meeting of the New York Automobile Trade Association yesterday, it was made known that the fund for the trade carnival which is scheduled to occur during the week of April 6th, had passed the $6,000 mark. It has been subscribed by the New York dealers and accessory houses on a basis of $200 each by the former and $100 by the latter. At yesterday's meeting, Thomas F. Moore, who had been selected to manage the affair, tendered his resignation, following a motion that no money be expended without the approval and counter signature of the finance committee. Moore made a speech detailing his knowledge of the business, etc., and said he could not work to advantage under such an arrangement. Action on his resignation was deferred until the next meeting. The definite program for the carnival has not yet been arranged, although a parade with 1,000 cars in line, and a race meet are the uppermost projects.

Auxiliary Receiver for the Royal.

Judge Lacombe of the United States Circuit Court has appointed Arthur Berry auxiliary receiver for the property in New York City of the Royal Motor Car Co., of Cleveland, Ohio. The appointment was made on the application of E. W. Cottrell, of Detroit, a stockholder, and Witt K. Cochrane, of Chicago, a creditor for $4,800. The New York assets consist of automobile parts and accounts valued at $8,000.

Referee Accepts the Frenches' Offer.

Mr. and Mrs. Jesse French, Sr., have withdrawn their claim for $61,287.21 against the estate of the St. Louis Motor Car Co., Peoria, Ill. The withdrawal was executed after the referee in bankruptcy had agreed to their stipulations, i. e., that a certain touring car in factory be surrendered to them and that the estate waive all claims for balances alleged to be due for unpaid stock subscriptions.

BRITISH IMPORTS AND EXPORTS

Figures for the Year Show Continued Preference for Foreign Cars—Sales to Other Countries Increased.

British imports and exports of automobile manufactures for the year ending December 31, 1907, revealed a continuance of that preference for the foreign-made article which has characterized its trade returns for some little time.

During the year no less than 4,819 cars were imported, having a valuation of $10,400,830, as against 5,776 cars brought into the country during the previous year, of a total value of $12,431,685. The total figures for 1906 and 1907, respectively, including the valuation of parts, were $21,858,300, and $22,763,430. Exports for the year amounted in total valuation to $6,638,490, of which $4,301,765 represented the declared valuation of 2,322 cars, and the balance, parts. The total exports for 1906 were $4,100,100, and for 1905, $2,513,570.

In December, 1907, 204 cars were imported into the British Isles, of a total valuation of $393,490, which with $733,970 worth of parts, brought the total up to $1,124,310, as compared with a corresponding total of $1,110,570, for the year previous. The December imports were the smallest of the year. Two hundred and six cars, valued at $386,975, and parts to the value of $168,990 were exported during the same period, the total exportation of $555,965, being lower than that of any month since August.

Traffic Department for N. A. A. M.

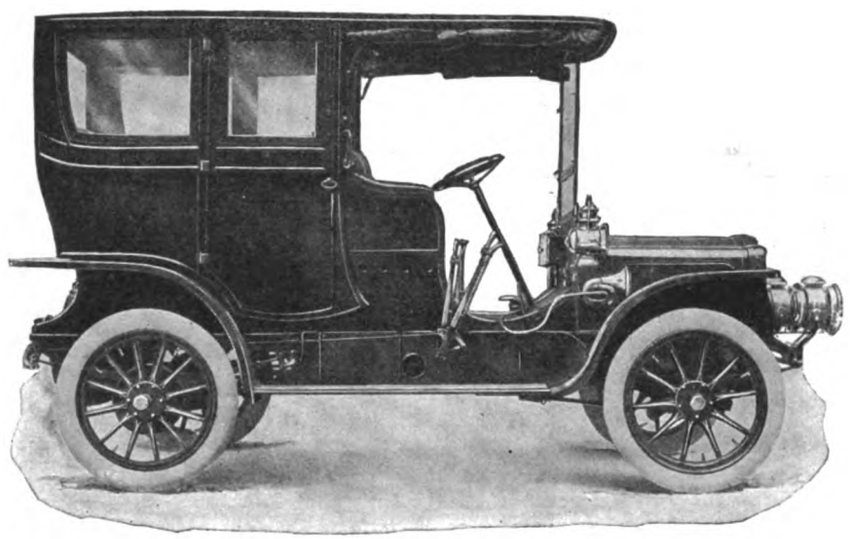
At the regular meeting of the executive committee of the National Association of Automobile manufacturers held in New York yesterday, Angus Smith, Olds Motor Works, and H. O. Smith, Premier Motor Manufacturing Co., were elected members of the executive committee to fill vacancies and F. H. Hart of the Corbin Motor Vehicle Corporation was elected a member of the association to succeed E. H. Brandt, who formerly represented the company.

The only other subject considered that was out of the regular routine was that relating to the establishment of a traffic or transportation department, which it was decided to inaugurate. It will be in charge of J. S. Marvin, who has been chief of a similar bureau in the A. L. A. M.

Thomas Henderson, Winton Motor Carriage Co., president of the association, presided at the meeting, the others in attendance being S. T. Davis, Locomobile Co.; W. R. Innis, Studebaker Automobile Co.; William E. Metzger, Cadillac Motor Car Co.; S. D. Waldon, Packard Motor Car Co.; Albert L. Pope, Pope Manufacturing Co.; Charles Clifton, George N. Pierce Co.; L. H. Kittridge, Peerless Motor Car Co.; and S. A. Miles, general manager.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, FEBRUARY 6, 1908

Sympathy and Inhumanity.

Sympathy for the unfortunate is natural. It follows that there are those who will feel that justice was not tempered with mercy when a sentence of eighteen months' imprisonment was meted out by a New Jersey magistrate to the Newark automobilist convicted of manslaughter in having killed a pedestrian while recklessly driving his automobile, and who then hurried away leaving his victim to his fate.

That the automobilist was an educated man, standing well in the community, makes his action in running away the more reprehensible. Action of the sort is a species of inhumanity, brutality and cowardice for which written words are too poor sufficiently to express condemnation. Sympathy scarcely is merited.

The sentence of eighteen months' imprisonment is just and richly deserved. That the crime was committed without malicious intent was undoubtedly considered by the jury who found the verdict; but that mere "lack of intent" should be accepted as an excuse for manslaughter is intolerable.

No right thinking man can fail to condemn absolutely the cowardly action of any man in leaving an injured person to his fate, and it is hoped that the stand taken by the court may be the warning of an attitude more to be feared than the possible primitive punishment which may be meted out to the man who renders every aid and shows a willingness to meet the consequences of his action rather than to hope to remain undetected by running away and brutally leaving the victim of his accident to an unknown and uncared for end. That man lacks the elements of real manhood who does that sort of thing and merits any punishment that comes to him.

Where Drivers Should be Seated.

The accounts of accidents, resulting from collisions where trolley cars and other vehicles have crashed into automobiles that have unexpectedly changed their course, have became so frequent and the fatalities so numerous that the mere assumption of carelessness on the part of the chauffeur does not appear to be a satisfactory explanation.

It is not always possible for drivers of automobiles to be aware of the approach of rapidly moving vehicles coming from behind, in time to avoid accidents, and anything that will help in giving them the opportunity of knowing exact traffic conditions at all times is of extreme importance to those who are interested in the development of motor cars.

An arrangement of the control which will permit the placing of the chauffeur's seat on the left side of the car, instead of on the right, as is now the almost universal practice, should be given the serious consideration of designers, especially those who are interested in the development of the type known as town cars.

That the control should be at either the left or right hand is a matter of little moment, but that the chauffeur's seat should be in a position where he would have every advantage for driving is of prime importance.

When the chauffeur is seated on the right side he is at a great disadvantage in learning if a vehicle is overtaking him on his left—as required by the traffic regulations—at the moment when he is about to turn to the left; looking behind him on the right a large section of the street is hidden from him by his car. To have a clear view he must stand up and look over the back, or if the design of his car prevents that, he must leave his seat and look behind from the left. A turn to the right does not require any of these precautions. Vehicles are not supposed to pass him on that side and there is no occasion for extreme caution when changing his course in that direction.

The convenience of the passenger in a runabout, or in the front seat of a touring car, is another reason for the left drive. It obviates the necessity of walking around the car, frequently through mud and slush.

The argument that is sometimes advanced that shifting of levers would be unhandy to a driver, possesses little merit. A very little experience will suffice to make such an arrangement entirely practical.

It is fair to assume that chauffeurs realize that eternal vigilance is the price of safety and that generally speaking, all reasonable precautions are used to avoid collisions. The careful chauffeur is, and the careless one should be, constantly on the alert and any arrangement that tends to assist in the avoidance of accidents and the convenience of owners, is a long step in a right direction. Control from the left seat is a step of the sort.

About the Hydraulic Clutch.

In the way of an infinitely variable speed changing device for connecting the motor to the driving gear of the car, and aside from the ordinary friction drive, safe to say nothing is more attractive from the theoretical point of view than the hydraulic clutch. For some reason which, perhaps is best left to conjecture, however, this system is not undergoing the rapid development which might be expected. Indeed, up to this time, practically all designs which have been offered to the public, have been of foreign development and have not reached a sufficient degree of maturity to be installed regularly on a car.

The beauty of the hydraulic clutch is that it permits all possible ranges of speed by smooth gradations, at the same time providing means of carrying away the heat of friction which is an inevitable accompanyment of any alteration in the status of kinetic energy. With all mechanical forms of transmission in which the variable speed idea is entertained, even to the min-

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imum degree contemplated in the friction clutch, there is always the chance that through extraordinary pressures, or other adverse conditions, the temperature of the working parts may be permitted to rise sufficiently to cause abrasion. With the hydraulic clutch this is impossible because the fluid is constantly circulating and is ever in contact with the walls of its containing passages, the greater portion of which are freely exposed to the air, and suffer no danger of abrasion in any way. This being the case, the only material effect of heat due to overworking the clutch must result in evaporation of the lighter ingredients of the fluid and hence in thickening it. To counteract injury on this account therefore, it is only necessary to renew the supply of fluid from time to time—a far simpler process than that of renewing the leather of a cone clutch, or the plates of one of the disc type.

Another point which is worth considering in this connection, is that the so-called hydraulic transmission, of which one or two designs have already been developed, is nothing more nor less than the plain hydraulic clutch subdivided in such a way that the driving and driven elements may be placed at the extremities of the power plant instead of adjacent and co-ordinate, as it were. Hence, simplicity and economy of construction, argue the use of the clutch rather than the transmission which carries the same principle on a more extensive plan.

There are several obstacles in the way of the design of such a system. Chief among them is that of the difficulty of regulating the amount of "slip." Generally speaking a clutch that is adapted to afford a desirable amount of slip in starting, fails to hold perfectly when complete engagement is required. This principle would seem to apply regardless of the method employed in effecting the connection. On the other hand, none of the purely mechanical devices yet submitted to the test of practical use have proved to be perfectly satisfactory in this respect, and it is reasonable to suppose that the difficulty of slippage on full engagement may be gotten over with the hydraulic system by the use of some method of positive engagement, if it be not possible to effect it directly and by a more ideal method. Certainly the field is one of the most attractive imaginable, and its exploration has not as yet been carried to such a point that the inventor need be seriously hampered in carrying out his ideas.

TO TEST INTERCHANGEABILITY

Something New in Contests—Reassembling of Dissected Cars to Precede Speed and Endurance Trial.

One of the most unique trials ever scheduled is soon to be undertaken in England under the auspices of the Royal Automobile Club, in which, oddly enough, the only entries will be that of the Anglo-American Motor Car Co., British agents for the Cadillac cars. This test will consist of the complete dissection of three of the 8-10 horsepower cars which are so well known in this country, their re-assemblage after inspection by the committee in charge of the affair, and the subsequent speed and endurance test on the Brooklands track. The object is to prove the claim of complete interchangeability which is one of the strong "talking points" of the Cadillac policy.

The plan is to have the Expert and Technical Committee of the club select any three cars, either from stock, from the importing crate, or from actual service, each machine to be held under rigid observation until the conclusion of the test. Under the tutelage of the committee, they will then be reduced to their lowest terms, and all the parts from each machine will be mingled in an indiscriminate heap on the floor of the club garage. From the pile, the judges will then select the proper number of parts and sort them into three separate heaps, from which employes of the agents will be required to construct three new machine. On request of the committee, it will even be permissible to introduce new parts from the agents' stock of spares, in order to prevent any possibility of special preparation for the test.

The final proof of interchangeability, which is to succeed a close inspection of the rebuilt cars by the judges, will be a test run on the Brooklands course, in which each machine, carrying two passengers, will be called upon to cover not less than 500 miles. Needless to say, the project, which is to be put into execution next month, is attracting a great deal of attention.

To Woo the American Dollar.

That the attractiveness of American dollars has suffered no diminution in the eyes of the gentlemen on the other side of the pond is shown by the organization of a British branch of the "Association Generale Automobile of France," for the purpose of "affording American motorists, who desire to tour Great Britain and the Continent, every facility for a comfortable journey with no discordant features," save frequent recourse to their letters of credit; and as a real live lord will assist in promoting that process it possibly may be made more agreeable than otherwise would be the case.

COMING EVENTS

February 1-8, Providence, R. I.—Show in Providence State armory.

February 3-8, Kansas City, Mo.—Kansas City Automobile Dealers' Association's annual show in Convention Hall.

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association's show in Central armory.

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

February 22, Boston, Mass.—Bay State Automobile Association's 150 miles endurance run to Providence, Worcester and return.

February 24-29, Portland, Me.—Annual show in the Auditorium.

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 7-14, Boston, Mass—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association's annual show in Duquesne Garden.

The announcement, which comes from London, proclaims that this organization is provided by the establishment in that city under the auspices of Lord Montague of Beaulieu "of an organization which cooperates with another" which has a network of agents all over the world.

Just what part will be performed by Lord Montagu of Beaulieu is not stated unless indeed he will be "one of the accredited agents," with tours mapped out, who will meet Americans on their arrival at any of the chief English ports and guide them through the country or pass them across the Continent from one country to another without any further trouble over the customs duties after the necessary licenses have been obtained "by the payment of merely the official charges."

As the cost, aside from the "usual official charges," will be only $25, the American tourists are assured of an intercourse with members of the nobility at a price within the reach of all!

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MORRELL WANTS MORE ENTRIES

Despite His Previous Dictum, They Will be Thankfully Received—Eighteen Nominations for Briarcliff Race.

Despite the positive assertion of Chairman R. Lee Morrell that unless twenty-five entires were booked by February 1st, there would be no race for the Briarcliff trophy race on the roads of Westchester county, New York, April 24th, the first of February came and went and—although but 18 entries are in hand, the race is not off and Morrell is still willing to accept entries at $1,000 each.

When the entries were supposed to have closed on Saturday last, 1st inst., 18 cars had been nominated, according to the list made public, which was as follows, the name of the drivers being in parenthesis:

Paul LaCroix, Renault (Bernin); C. M. Hamilton, Isotta-Fraschini, two cars (Poole and Harding); J. H. Tyson, Isotta-Fraschini (Strong); H. A. Lozier, Lozier, two cars (Mulford and Michenor); C. B. Tangeman, Hol-Tan (Fosdick); C. A. Singer, Simplex (Tracy); E. Rand Hollander, Fiat, two cars (Cedrino); S. B. Bowman, Apperson (unnamed); A. Hammerstein, Allen-Kingston (Campbell); J. J. Brown, Maja (Murphy); Harry S. Houpt, Thomas Flyer (Roberts); H. W. Whipple, Stearns (Oldfield); Wyckoff, Church & Partridge, Stearns (Vaughn); F. B. Stearns, Stearns (Leland).

As this formidable list was seven cars short of the requisite number, the "advisory committee," composed of newspaper writers, was asked for "advice"; at the same time it was stated that Morrell had three more entries tucked in his vest pocket. Being vest pocket entries their identity was not disclosed.

Adding 18 and 3 together Mr. Morrell correctly gave the answer as "21," which, plus 4 would make "25," so would it not be advisable to hold the entry list open a little while longer? The advisory committee naturally agreed that Mr. Morrell's mathematics were correct and all hands will make efforts to secure a few more cars.

While the necessary entries have not been received, those drivers who expect to participate already are training on the course and some of them admit that the course is far more dangerous than the Long Island Vanderbilt course. Joseph Tracy, of long experience and conservatism, who will drive a Simplex, asknowledges that the worst portions of the Briarcliff course are "very much worse than the Vanderbilt danger points." With twenty of its thirty miles consisting of wriggles and twists and angles and bad curves, to say nothing of steep hills and narrow roadways, the Westchester course, as the Motor World previously stated, is chockful of "possibilities."



STRAIGHT MILE OF MACADAM NEAR THE FINISH

Strangely enough, the grandstand will be located between Eastview and Briarcliff where the spectators will not be able to see more than 100 yards from the start because of two sharp turns and bendings of the road beyond a hill. On the other side of the grandstand the cars may be seen on at least a half mile stretch of straight road, one of the very few stretches of the kind on the entire course. The accompanying picture of the road near the grandstand location will convey a good idea of the twisting nature of the road. The only opportunity for safe fast work is on the straight road near Briarcliff.

The exact distance of the race has not been fixed. The time limit—not for the entries, but for the race—has been set, however. It will be eight hours.

Bill to Prohibit Road Racing.

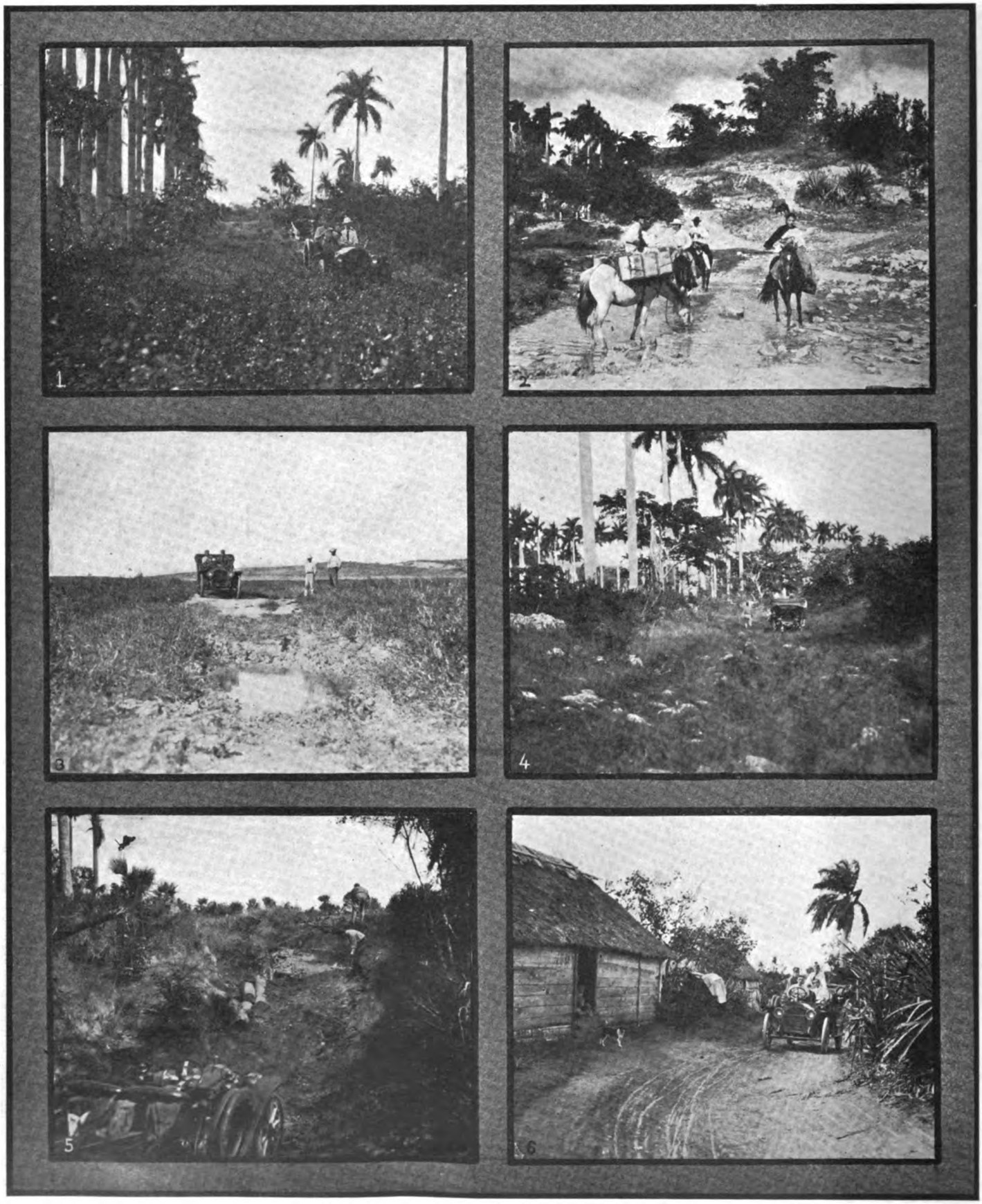
Although preparations for the Briarclift race are going on it will be impossible to hold road races of any sort if the measure prepared by Assemblyman Yates becomes a law. The bill, introduced yesterday, repeals that section of the New York State law which gives town boards and boards of supervisors of a county the right to set aside roads for such purposes.



NEAR GRAND STAND, SHOWING WINDING NATURE OF THE COURSE

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SCENES ON ROUTE OF PACKARD EXPLORERS IN CUBA.



1, "ROAD" IN MATANZAS PROVINCE. 2, ONE OF THE SHALLOW STREAMS. 3, CHAIN OF MUD HOLES MARKING A ROAD IN SANTA CLARA. 4, ROCKS AND BOULDERS FOR A ROADBED. 5, EMERGENCY ROAD IMPROVEMENT ON A SANTA CLARA HILL. 6, CUBAN SUBSTITUTE FOR A HOTEL.

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PACKARD EXPLORATION IN CUBA

Despite Reports to the Contrary There are no Good Roads—Strenuous Experiences of the Explorers.

To travel hundreds of miles in Cuban territory through which no four-wheeled vehicle of any kind had been before was the recent automobiling feat of S. D. Waldon, sales manager of the Packard Motor Car Co., and party, in a Packard "Thirty." The wide advertisement which has been given the few good roads which lead out of Havana in certain directions, conveys a wrong impression of travel generally throughout the country. When Mr. Waldon accompanied by Edwin S. George, Fred Crebbin and E. Ralph Estep, arrived in Havana and announced the fact that they intended to do a little touring in interior Cuba in a motor car, there went up a general protest. Hotel men, the American garage owners, sugar planters, railway men, guides and interpreters all said: "It cannot be done."

The interior is without roads. Horse trails lead from one place to another. There is no long-distance traveling. The only vehicles which attempt to go about the country are the high-wheeled ox-carts for hauling sugar cane. They are drawn by three or more yoke of oxen. Their wheels are from seven to ten feet high. They cut the soft ground into parallel lines of wide ragged ruts two to four feet deep. Where the ground is hard it is littered with immense boulders or else itself is the base rock of the island. Then the rough trail may wind into a region where there is nothing to mark the route but the sun or compass, and no break in the succession of long, tedious miles of persistent traveling through grass as high as the car.

From lowlands and plateaus the way leads into rugged hills and mountains. Here the road taken by the Packard tourists was a continuation of washouts and ravines which formed the only way through the mountain passes. Each day there would be from three to ten rivers to ford. Cuban rivers flow deep, between banks 50 to a hundred feet high. Their beds had to be reached by following the tortuous channel of some erstwhile mountain stream which had once run into the main river. Then came the ford, with the car on the uncertain footing afforded by the solid but uneven rock of the river bottom.

During the latter days of the journey the heavy rains of a delayed wet season turned the red clay into a trail of sticky, heavy mire and created in every valley and low spot a seemingly bottomless hole. In several instances they were so wide and deep that it was necessary to build a rough corduroy of palm logs and underbrush in order to cross.

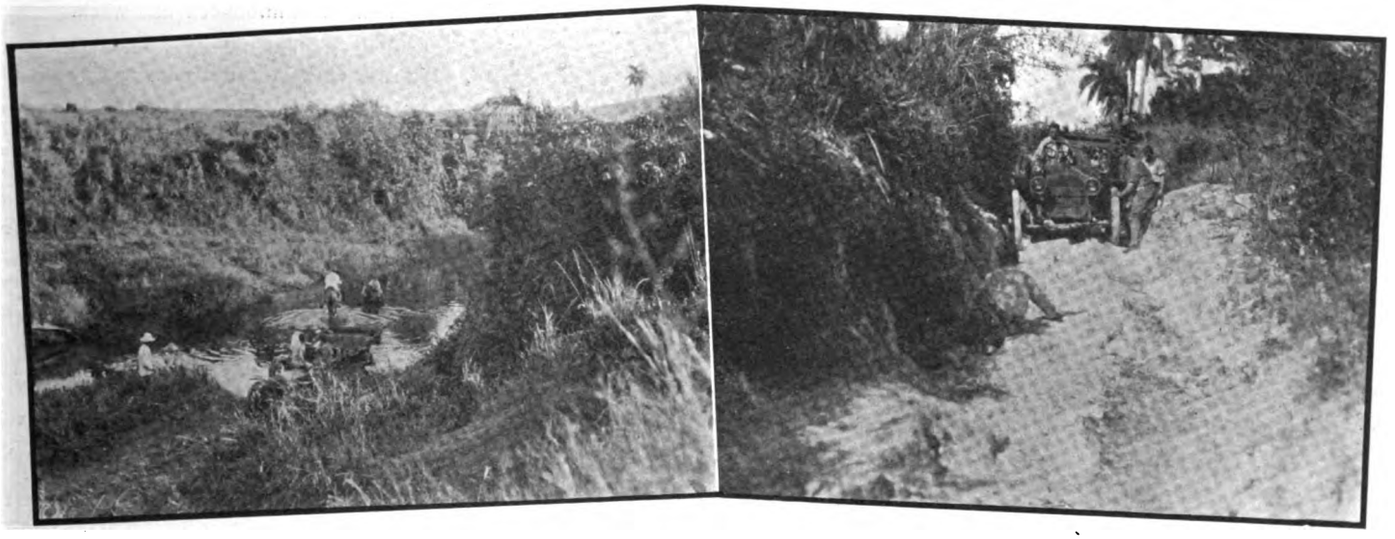
Travel was, of course, slow. Some days 30 to 40 miles, one day 63 miles, and then one hard-fought day's journey of 14 miles. It was on this day that three deep rivers, within a few miles of each other, were forded in the heart of the Santa Fe mountains. Many times the road was so difficult that the easier way to progress was to open fences and drive into and through fields. These might be plowed ground, rough, wild grazing lands or sugar cane fields where the path would have to be taken in the uneven lane between the tall cane and the fence.

Each day the condition of the country would change. One day after running out of rocky hills where the car had clambered over areas so uneven that the front tires actually would be pulled from the rims, there was encountered a broad level tract in which there was nothing but grass, brush, stones and palm trees as far as the eye could see. Steering by the sun, the tourists were lost in the barren country for hours, and reached a populated section only by striking out of the general direction toward the railway, and then following it.

Each night the tourists stayed where they were at dark. Traveling at night was impracticable, and as there is no twilight in Cuba, it was necessary to accept the accommodations at hand when the sun set. The first night out a camp on the ground was made at the bottom of a deep valley, supper being obtained from a Cuban farmer. Succeeding nights were spent on cots or in hammocks in the sheds or living rooms of farm houses and country general stores; one night was sleepless, with all four tourists bunked in a row on the table of a sugar mill eating house; while the most unique night's rest was that spent in hammocks swung under the thatched roof of a commodious pig pen.

The general direction of the tour was from Havana to Matanzas; thence, via Jovellanos and Macagua, to Santa Clara, and from there, by a crooked route through Camajuani and Placetas, to Sancti Spiritus. The car was without special equipment, except the axe, mattock and shovel picked up en route for use by the engineering department. At the suggestion of a Cuban farmer, who had witnessed the way in which the Packard had raised herself out of a deep mud hole after having been given a foundation of stones on which to obtain traction, the car was nick-named El Toro. This name, roughly painted on the sides of the car, immensely pleased the rural Cubans, who, of course, had never seen any other automobile.

Of experience there was a plenty and the tourists have tales to relate which seem almost unbelievable—tales of unprecedented hill-climbing up jagged rock stairways that seemed as though they would tear the car to pieces; of wallowing in the long chain of mires and bogs which made up the road of several days; of fording rivers by following the narrow ridge of high places on the bottom; of wonderful feats in quick road engineering to avoid unnecessary work, and tales of the innocent Cuban inlander, his country, his family and his food.



TYPICAL FORD IN A SANTA CLARA RIVER

TRAIL THROUGH A CUBAN RAVINE

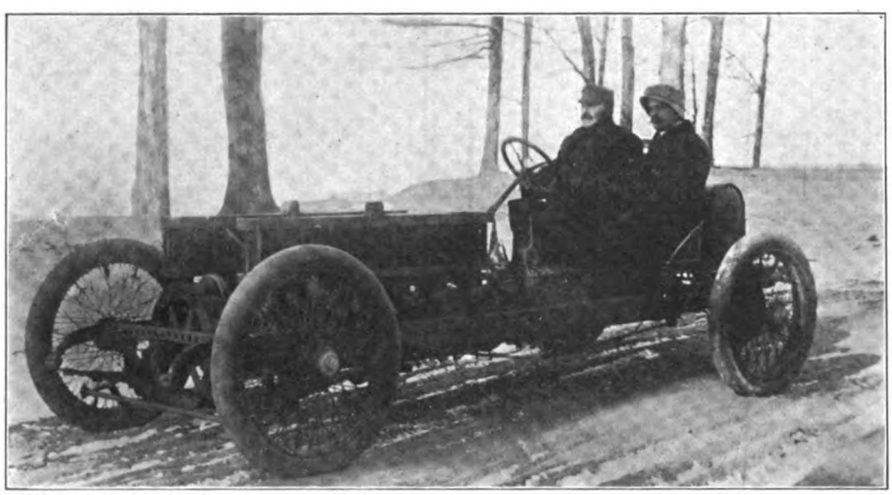
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CHIP ON THE MAXWELL SHOULDER

Twelve Cylinder Marvel Ready to Meet All Comers Under Dewar Conditions—Two Miles a Minute Cars Eligible.

If any one anywhere in the world has any kind of a car they think can "go some" all he needs to do to get on a race is to notify the Maxwell-Briscoe Motor Co., at Tarrytown, or Robert Lee Morrell, of the contest committee of the Automobile Club of America. For the Maxwell people think they have the car that can do a mile in at least 27 seconds.

The Maxwell speed creation has no less than 12 cylinders which develop 180 horsepower. The car has been built for some time; in fact, it was constructed for the last Vanderbilt cup race, but has been greatly improved and now is ready to meet all comers.



MAXWELL MULTICYLINDER RACER ON TRIAL SPIN

The Maxwell people naturally were disappointed when the Dewar trophy race was scratched from the Florida program, as they had designs on that trophy, and now have issued a sweeping challenge to all speed merchants, whether advocates of steam or gasolene, to meet them in a race under the Dewar conditions, either during or immediately following the Florida beach tournament. Further than that, they say their multi-cylindered racer will be in evidence for the Dewar trophy whenever the race is held, and have asked Morrell to arrange a contest.

Long Islands Promote a Winter Test.

If the present spell of cold weather continues the Long Island Automobile Club, of Brooklyn, will on Tuesday, 25th inst., hold what it thinks will give the contestants some of the rigors of a New York-Paris race, via Alaska and Siberia, without all of its hardships. On that day it will hold a 242 miles economy test, from Brooklyn to Montauk Point and return.

The proposed economy run does not differ in any way from others of the sort that have been promoted by the Brooklyn organization. No penalties will be made for repairs, replacements or adjustments to car or tires, the only condition being that the contestants must complete the 242 miles within the set time, made the night before, and based on road conditions at that time.

The winner will be the car that carries its full quota of passengers at the lowest cost for each person, fuel and oil only to be considered. Gasolene will be charged at the rate of 25 cents per gallon and lubricating oil at $1.00 per gallon. Instead of sealing the tanks each car will be given sealed cans of fuel and oil, which will be in charge of the observer.

Entries will close on February 20th, although they will be received until 6 p. m. the day before the contest, at an additional fee. Dealers will be limited to three cars each, the entry fee for the first being $25, for the second $15, and for the third $10. The prizes have not been selected, but it is stated that $200 will be expended for the first, $100 for second, and $50 for third.

Holding Motorists Wholly Responsible.

It is the driver's business to look out for the pedestrian, and not the latter's business to evade automobiles. Such is the substance of a decision by the District Court of Appeals in Los Angeles, which declares in effect that pedestrians cannot be charged with contributory negligence if they do not keep out of the way of automobiles. The decision confirmed a judgment for $7,000 damages awarded Stanley King, who had been injured by an automobile of E. K. Green.

Boston Arranges Endurance Run.

Boston is to have an endurance run on February 22d. This was decided by the Bay State Automobile Association last week. The route will be from Boston to Providence, then to Worcester and back to Boston, making a triangle of 150 miles.

AUTOMOBILE SPEEDWAY IN JERSEY

Another Project for the Construction of One in the Lakewood Region—Philadelphians Incorporate.

For about the fortieth time that stretch of waste land which is situated southwest of Lakewood, N. J., is to be converted into an automobile speedway. Since the subject was first broached more than two years ago there have been numerous companies organized to build a course through the pine forests there, but like most projects of the sort they died the natural death. The latest scheme for the realization of the proposition was announced this week.

Philadelphia capitalists, it is stated, under the title of the Hanover Consolidated Co., of New Jersey, have acquired 20,000 acres of land in Burlington and Ocean counties and have decided to build an automobile speedway twenty miles long and 100 feet wide. This differs materially from all previous New Jersey schemes; they were to have been five mile circular tracks, but the several companies promoting them have not been heard of since. Whether they ever succeeded in selling any of their stock is not known.

According to the announcement it will cost about $400,000 to build the track, club houses, garages and other things of the sort, which usually play a leading part in the plans of speedway promoters. The capital stock of the new company is $600,000 and the Colonial Trust Co., of Philadelphia, is named as the trustee. It is planned to locate the speedway between Brown's Mills Junction and a point twelve miles south of Lakewood, which would make it near Toms River. The land is absolutely worthless except for sites for proposed speedways and for unscrupulous real estate sharps who find admirable building sites there.

"First mortgage gold bonds to the amount of $400,000 will be issued and sold to meet the expense of the erection of the speedway, club house and garages," says the announcement. "All holders of 100 shares of stock in the Hanover Co. will be entitled to full membership with all its privileges and free entrance to all races perpetually."

Contrary to most schemes of the sort the promoters do not keep their names in the background, but publish the full personnel of the Hanover Consoldated Co., as follows: President, William H. Wile; vice-president, John P. Harlan; treasurer, E. T. Davis; secretary, George A. Kiefaber; directors, William H. Wile, George A. Kiefaber, S. J. Phillips, E. T. Davis, W. S. Wilson, John P. Harlan, William H. Wile, Jr., and A. McCracken, all of whom are residents of Philadelphia.

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Motor Cars as Mediums for Municipal Graft

Concluding Story in Which is Included Extracts From the Diary of a Municipal Chauffeur, Showing Just How and for Whom the Taxpayers' Automobiles are Employed in Private Service—Speed and Lamp Laws not for City Officials.

In last week's instalment of my story, I told of my first experience in being placed under the orders of persons who were not in any way connected with the department for which I worked, or connected in any way save by ties of relationship or friendship with the municipal servants.

There are those who may maintain that if I actually possessed the pride or self respect that I claimed to possess I could not and would not have obeyed an order that was so manifestly improper if not actually dishonest; and there may be captious critics of my conduct who will say that I should have refused to permit my services to be placed at the command of women, and that I should have insisted on being used only for the work of the department; these critics will maintain that I would have won the point, as the inspector would not have dared to incur the notoriety I could have caused by bringing the matter before the city authorities in such a way that the daily papers would have revelled in the opportunity for devoting columns to a subject that with its many side details furnished choice scandal in public, as well as in private life.

But in suggesting this solution of the problem my personal feelings are not taken into consideration. In the first place I am opposed to notoriety, and would not consider a course of action that would place me in the limelight; besides, I liked the inspector for many of his personal qualities. Our relations were entirely friendly. Above all, I could not bring into a personal grievance the names of women who were respectable, or the names even of other women who possibly had had respectable parents, and this would have been required of me if I had made any claim of unfair treatment or had endeavored to make my position more agreeable by appealing to the higher authorities, and calling to their attention the nature of my work.

Lures of Public Position.

It is true, I could have resigned, but my several years in the department had caused me to look upon my position as being necessary to my maintenance. I did not realize that I could do as well in the outside world, a world that seems very foreign to the municipal employe who learns soon to believe himself a thing apart from other mortals, and I thought of my home and those dependent on me and was willing to make great sacrifices of myself rather than to bring worry and care and an uncertain future into the home circle. And through it all was the constant thought, "It can't last."

Then, too, as a municipal chauffeur, I was given certain privileges over other drivers that were not without an effect on my estimation of, if not of myself, of my importance to the community: the right of way was mine if the department sign was on the car, or if the police officer recognized me as a part of the city administration. The speed laws may have been made for others, but I was exempt. If I entered into a friendly race on a public highway with some innocent chauffeur he was promptly arrested and I was not required to even slow up lest maybe some important city business be delayed! I used lights at night only when agreeable to me. If I was out of oil or gas I didn't bother to replenish the supply until it was entirely convenient.

Indifference to the Law.

One night when I was speeding on one of the driveways, my tail light went out and a policeman noticing it as I passed gave chase on a bicycle; several blocks were traversed before a trolley car caused me to reduce speed, and he caught me. First, he declared me under arrest for traveling at the rate of 20 miles an hour, also for driving without a light at the back. I responded by telling him what I was, and further directed him to light the offending lamp for me, and he, wise in his generation, knowing that the influence of my superior might cause him to be transferred to patrol duty, complied and explained his mistake in delaying me by stating that he did not know it was a city car, as no sign was displayed. While all this was going on, the inspector and a woman companion held their peace in the tonneau.

These liberties were not without their influence. I enjoyed the feeling of immunity from arrest. I was frequently envied by "private" chauffeurs who wanted the same security and it all tended to make me desirous of retaining the position.

There were times, though, when the breaking point was so near that it is remarkable it was not reached. An instance of a near approach to "mutiny," insubordination," "failure or refusal to obey orders," or anything else you may care to term it, occurred one night when I had driven the inspector and his sister, and her three children to one of the popular eating houses of a resort about twenty miles away. It was midnight when I left her at her home and there was still an hour's work before me, as he had to be taken to his apartments after which the machine must be brought back to its regular shelter, about three blocks from the sister's home. As he left the car—it was nearer 1 a. m. than midnight—he directed me to meet his sister at 7 in the morning and drive her to the depot as she was going away for her summer vacation. The injustice to me, the absurdity of the idea is apparent when I state that she lived one and one-half blocks from the depot, and it is fair to assume that before "Brother's" unexpected affluence, walking was considered a desirable means of locomotion, even when distances much greater were to be traversed. I failed to appear on time and the lady walked. Expecting trouble as the result of my "failure to obey orders," I prepared an address, the chief characteristics of which was directness rather than diplomacy, but no occasion arose for any remarks as the inspector made no comment when I merely reported "too late; your sister had gone." It may be that he saw "blood in my eye," or perhaps the proposed ride of a block and a half was an incident of too little importance to become the cause of an official censure.

Rendering Menial Service.

From time to time I was directed to attend to little personal affairs of the inspector, such as carrying his soiled linen to a laundry; delivering to some one a grip he had loaned, and later going after it; moving the effects of a friend who changed from one boarding house to some other, and little things of this sort. There were so many of these "municipal duties" that to recite even the majority of them would be tiresome and would be the means of causing the accusation that I grossly exaggerated, if indeed, I was not lying.

As an evidence of the fact that I am not relying on memory or citing instances which occurred at long intervals, I append here extracts from my diary. These are the records of consecutive days, made at the time and now copied without additions or changes, save that I have used substitute names for the individuals and places in lieu of the correct ones, which are contained in the diary.

The day of the arrival of the mother and father of the inspector from their little home in the country, seems a fitting place to begin the diary records:

"Monday, 8th.—In shop from 8 a. m. until 4 p. m., working on chains; then to depot. Met inspector's father and mother, also the inspector; drove to sister's house in the suburbs; joined by sister, drove to

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Athletic club for dinner; joined there by brother-in-law and brother; left at 9.40 for suburban home, where we dropped mother, father, sister and brother. With others drove to inspector's rooms in the Bleakside. Raining hard. Three blow-outs after leaving him. Got in garage at 3 a. m. Nineteen hours' work.

"Tuesday, 9th.—Left garage at 7 a. m. At suburban house at 8. Father, mother and brother to excursion boat; tinkered car as chains were bothering until time to meet return boat at 5 p. m., when father, mother and brother rode to the Bleakside, where they left me. Met the inspector and drove him to a restaurant where he had an appointment with Mr. Cutting. Supper at 8.30. Picked up inspector, drove to another restaurant, joined by father, mother and brother. Back to suburban home; dropped relatives and picked up stranger, who returned to the Bleakside with the inspector. Was to have taken stranger home, but a chain had been coming off frequently, so I went direct to garage to repair it in readiness for next day. 17½ hours.

Joy Rides Day and Night.

"Wednesday, 10th.—Left garage at 8 a. m. Went to manufacturer's shop and had new emergency drum put on rear wheel. Drove to suburban home where father and mother entered car; returned to the Bleakside, joined by brother; made a round of calls; then to depot; brother left; returned to suburban home, parents left; then to garage—only 12 hours.

"Thursday, 11th—In garage at 7 a. m. Cleaned engine, oiled and made some adjustments; drove to suburban home, where father and mother got in; took them to the Bleakside; joined by inspector; went shopping; drove to depot, father and mother left on train; drove inspector to the Bleakside, then to the Clear Wilde apartments where Mrs. Blank and Mrs. Dash joined us, also Mr. Goode. Drove to Mellwood inn—me to the kitchen—returned to the Clear Wilde, dropped Mrs. Blank and Mr. Goode. Drove through park for an hour, then to within a block of Hotel Hartford where Mrs. Dash left us and walked to hotel. Then to the Bleakside. Garage at 11.30 p. m. 16½ hours.

Friday, 12th.—Didn't show up until 10 a. m. Drove to office. Inspector did not come out until 12. Drove to Willmot's restaurant, which he entered; at 4 he came out with Mrs. Dash; she left him and I drove him to Hotel Wellingford; joined there by Mr. Close and his fiancee; drove to the Bleakside, where the inspector's room mate, Mr. Clear, joined us; then to Woodyview inn, at which place some sort of a function at Mr. Close's expense, occurred. I fared well in the servant's quarters. Returned to the Willingford, dropped Close and fiancee; to the Bleakside, where inspector and Clear left; then to garage at midnight. 14 hours.

"Saturday, 13th.—As I didn't have to go out until 11 a. m., spent 3 hours trying to fix rear right wheel where the chain was noisy and troublesome. Was at the office at 11. Joined by inspector after a 2 hours wait; drove to Hotel Graham; joined there by Mrs. Dash; drove to Innwood restaurant, where inspector and Mrs. Dash were left while I drove to home of Inspector's friend and presented a letter; later I returned to Innwood and took inspector and Mrs. Dash for a short drive. Left Mrs. Dash at a point where she could get a trolley to her hotel; drove inspector to automobile agent who took him for long demonstration ride; but I was off at 3.30—only 7½ hours.

"Sunday, 14th.—Off. (This does not occur frequently.)

"Monday, 15th.—In shop from 8 until 5. Transmission needs overhauling.

"Tuesday, 16th.—In shop from 8 until 5 on transmission.

Excessive Wear Ignored.

"Wednesday, 17th.—In shop at 8 with orders to positively have car in running order by night. At 5.30 p. m. took car out not nearly finished. Went to the Bleakside where inspector and his room mate got in. Drove downtown; nearing the house where I had been ordered to stop, Mr. Clear left us. Lots of ignition trouble. Joined by inspector's cousin; drove them to Latan's for dinner. During the two hours' wait I straightened out some ignition difficulties; then he and she came out; although one of the chains was continually coming off, owing to a worn out rear sprocket, he insisted on a drive through the parks and boulevards. Took cousin to downtown home, then returned to the Bleakside. Chain had come off eight times. Returned to garage at 12.10 a. m. 16 hours.

"Thursday, 18th.—Found that the inspector had ordered another chauffeur to take the car to the manufacturer's shop to have sprocket put on. During the trip the wheel was broken. I had been excused until 4 p. m. When I found the car was out of commission I went to the Bleakside. The apprentice was there with the little car. I took this from him and when Mrs. Dash, Mrs. Blank and Mr. Goode came out of the inspector's apartments they brought instructions from him for me to take them riding. As the little car had only three cylinders in working order, they quickly tired of their ride, and a restaurant became their destination, after which I returned to the repair shop at 8 p. m.

"Friday, 19th.—In shop from 8 to 5.

Saturday, 20th.—Big car in commission again. Directed to wait orders from Mrs. Blank. At 2 p. m. received message to have car at Clear Wilde apartments at once; she and Mrs. Dash were waiting; made some calls; drove through park; dropped Mrs. Dash at her hotel; joined at Clear Wilde by Mr. Goode and Dr. Keene; drove to Woodyview, where they had dinner and I had dinner and other things in the servants' quarters. I accepted Goode's invitation and had cigars, drinks, etc. First time I have taken liquor when driving, but I'm played out; had tire trouble in the afternoon. It rained at night and chain trouble occurred. Returned the party to the Clear Wilde, then to garage at 12.15 a. m.—16¼ hours.

"Sunday, 21st.—Inspector out of town. Off again.

"Monday, 22d.—From 8 until 5, in shop. Put on new sprockets, then to the Bleakside, where inspector got in; then went to the Clear Wilde; joined by Mrs. Blank and Mr. Goode; drove to Hotel Reem where they had dinner; then to the Clear Wilde where Mrs. Blank left, after which to a point where we watched a department demonstration of a new disinfecting scheme for two hours—my first work in the city's interest in many weeks. In garage at 12.15 a. m.—16¼ hours.

"Tuesday, 23d.—Met the inspector's father, mother and brother-in-law at boat-landing at 8 a. m. Drove to depot where father and mother left; took brother-in-law to office; waited four hours, then drove him and Mr. Goode to ball game. After which the inspector joined them; drove to the Clear Wilde, where there was a wait of an hour, then the inspector and brother-in-law came out and were driven to the Bleakside. Reached garage at 8 p. m.—12 hours.

"Wednesday, 24th.—In shop on transmission.

"Thursday, 25th.—In shop on transmission.

Queer Places Visited.

"Friday, 26th.—In shop from 8 until 4, then to office; drove inspector to Hotel Niagara; joined by Messrs. Gay, Close and Dr. Keene; drove to Mr. Gay's house and got his baggage; to a cafe; to depot, where Gay left us; then to Waterview, where they spent two hours at dinner, during which, in an unexpected moment one of the party fell through some shrubbery to the great dismay of the proprietors and discomfort of other patrons. Later we went to a residence of heavy curtains, and solid doors where all left the car and I went to the garage at 11 p. m.—15 hours.

Saturday, 27th.—To the office, where a message directed me to a hotel; joined there by inspector, Mrs. Blank, Mrs. Dash, and Mr. Goode. After an hour's drive Mrs. Dash left at a point near her hotel, while we drove to boat landing where the inspector left; then to a friend's residence, joined by him, went to Woodyview for dinner, after which the different members of the party were returned to their respective abodes and I to the garage at 12.15 a. m.—12¼ hours.

But why go on? Is not my contention proved that the city's business had but little of my time or services? I have reproduced a record of consecutive days. I can skip here and there and give instances of rides out of town, of one occasion when the odometer showed 162 miles for the day's trip, and the only passengers were a law-

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yer and his woman friend, and in justice to him I must say that he paid for the gasolene used and wanted to pay me for my services. He was the only one who ever did the former or offered to do the latter.

The machine was frequently loaned to friends, the city paid for its upkeep and maintenance; tires, gasolene, lubrication were paid for by the taxpayers; the salaries of the men in the repair shop came out of the city's funds, and all in all, it was graft from beginning to end; it was dishonest and it was illegal. And the inspector to whom I was assigned was but one of many city officials who similarly misuse the city's property. I saw and heard enough of other officials to make certain that my original statement that 80 per cent. of the use given the city's cars is illegitimate and dishonest use.

Inspecting While Asleep.

Can any one, by a stretch of imagination, discover anything akin to municipal duty in a trip at night when an inspector and a man friend have dined both well and very unwisely? Perhaps not; but, even this kind of "duty" fell to my lot. On an occasion of the sort, the inspector ordered me to drive about the city as he desired to inspect certain public conditions.

Within five minutes after we started there were snoring noises coming from the tonneau. I turned and saw that both men were "dead to the world" so I drove where fancy dictated for a couple of hours, and finally stopped in front of the inspector's apartments, and after much effort awakened him.

"Will you do any more inspecting tonight?" I asked, and there was no tone of "envy, hatred or uncharitableness" in my voice.

It took him a minute or two to realize where he was, what he was doing, or what he supposed he was doing, and then the answer came:

"No; I guess we've seen enough for tonight." And awakening his companion, they entered the apartment.

There is little need of carrying the story further. I have accomplished what I set out to do. I have demonstrated that the automobiles in the city's service are to a large measure treated as the private property of officials. There are exceptions, of course, even as there are other chauffeurs who can tell of "duty" similar to mine.

Prevalence of the Graft.

I often hear of "joy riding" and I could recite tales of trips by others that are more unbelievable than any experience of my own that I have recounted. I know of one case of a city official taking in a city's automobile a man friend and two women to a summer residence of one of his relatives after the latter had returned to the city and staying there two days and nights, the car being kept in the barn while the chauffeur occupied a servant's room and the whole party lived on the contents of a generously supplied hamper that they had brought with them. Trips to the race track and to distant places are the rule rather than the exception, when baseball or football games are to be played by college teams. In fact, excursions to places where the official would not be willing to spend the amount necessary for the railroad fare, are constantly indulged in at the taxpayers' expense, until the whole question is a shame and scandal which will some day find a place in the daily press to the extreme discomfiture of a number of office holders. It may be that an exposé will even attract the official attention of a county prosecutor or district attorney.

From time to time one reads in the papers of some city official being arrested for speeding in a state in which he can have no official business. There are frequent reports of accidents when returning from race track or ball games, and these are but the surface evidences of a condition that is deep rooted. They may be the straws which show the direction of the wind, but by their frequency they may become the outward and visible signs which will lead to an examination that will disclose the thousands and tens, if not hundreds, of thousands of dollars which this modern form of graft is adding to the taxpayers' burden and which will bring to an abrupt termination a species of malfeasance in office that may be found to have been provided for by a section of the penal code.

Theoretically, and in the hands of a conscientious man, the municipally owned motor car in the service of a public official is an instrument which adds to his efficiency. Practically, it is a premium for the pursuit of pleasure which is equivalent to saying, a premium for neglect of the duty for which, as a rule, the official is too well paid.

Analyses of Cylinder Incrustation.

Considerable interest has been aroused abroad over the matter of cylinder incrustation as a result of the several analyses which have been made. One enthusiast has even gone so far as to advertise broadcast for samples taken from cylinders, which have been working under known conditions, promising to have them analyzed, hoping by this means to get at the subject in a broader way than would be possible by studying such conditions as might come under his own observations. In this connection, it is interesting to note that a new constituent of this rather peculiar substance has just been discovered in the shape of copper oxide.

Like the silicates, the discovery of which a year or so ago, caused no little discussion, it is difficult at first to see how copper can find its way into the cylinder. A little reflection, however, is sufficient to suggest that it is due in all probability to the abrasion of the carburetter throttle—this being the only copper or brass part which is in direct line of intercourse with the interior of the cylinder. A second and more remote possibility is, that due to neglect of the precaution of cleaning out the engine base, a certain amount of wear from the crank shaft bearings might have become mingled with the lubricant to such a thorough degree as to be carried up into the combustion chamber with the oil. The sample under analysis was taken from a two-cylinder engine by the investigator in question, who does not attempt to explain the presence of the copper:

"Sample 'Front,'" as he explains, "was taken from the front cylinder of a two-cylinder engine, and it was believed that this front cylinder had been often over-lubricated. Sample 'Back' was taken from the back cylinder, which was believed to have been generally under-lubricated:

	Front Per cent.	Back Per cent.
Oil (extracted with ether)....	22.73	12.73
Loss on ignition (mainly carbon)	64.46	71.65
Ferric oxide (Fe_2O_3)	7.19	9.51
Insoluble residue	1.30	2.44
Lime (CaO)	0.35	0.65
Copper oxide (CuO)	3.69	2.73

Big Increase in British Registration.

A gross increase in motor vehicle registrations amounting to 25,573, was recorded in the United Kingdom last year, the grand total of motor cars, both of commercial and pleasure types, together with motor cycles, amounting to no less than 119,618. The number of touring cars now registered is 61,617, while commercial vehicles are numbered to the extent of 4,124. These figures represent gains of 15,917 and 1,425, respectively, over the corresponding returns of 1906. The total number of driving licenses is now 205,606, or 38,041 more than the enrollment at the beginning of last year. Licenses awarded to owners of motorcycles, now number 53,877, as against 45,645 one year ago.

Making Damaged Bolts Available.

By filing several V-shaped grooves in the nut, it is often possible to straighten out the threads of a damaged bolt sufficiently well so that it will serve a very useful purpose. If the nut be of steel, it may even be hardened by heating it to a cherry red color and quickly immersing it in water. In the case of a damaged nut, it is possible to effect a similar repair by filing V-grooves in the bolt, and using it as a tap. In either case, care should be taken to follow the old threads as closely as possible. If the end of the thread is badly damaged it may be cut away by means of a file leaving merely the roots of the old thread as a guide for the extemporized "chaser."

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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PAGEANTRY AT PROVIDENCE SHOW

Military Review an Incident of the Opening—Many Cars Staged and a Long List of Exhibitors.

Last Saturday night, 1st inst., was a red letter night for Providence, R. I. Three important events occurred—the opening of the automobile show, a review of more than 300 national guardsmen by Lieutenant-Governor Watrous, and the opening of the new State armory on Cranston street. They took place simultaneously and at the same location, as the armory building was "christened" with the annual automobile show and a military review, the exhibition being under the auspices of the Rhode Island National Guard, with the help of the local dealers.

In view of this pomp the opening was an auspicious one, despite the bad weather. The bright uniforms of the soldiers and sailors, and the feminine fluffy-rufflery heightened the beauty of the show decorations. After the show had officially opened the review of guardsmen took place in the drill hall in the basement.

The decorations were pleasing and novel as well. As the military authorities would not permit a single nail to be driven into the floor, the matter of arranging the decorations and dividing the booths became complex for a time. Both the balconies are covered with a buff and blue-striped bunting, hung from the railing, while back of this, on the walls, are paintings and American flags. With the exception of the aisles the floor is covered with green carpet edged with deep red, and the spaces are separated in the same manner, with a strip of red. Suspended from the beams overhead is a vertical border of the same material, divided into sections by loops every dozen feet. There are plenty of flags of every nation. Palms divide the room into sections for the various exhibits, which are:

American Locomotive Automobile Co., Berliet cars; Crane Automobile and Garage Co., Atlas; Davis Automobile Co., Peerless, Thomas, Winton, Oldsmobile, Locomobile, Buick and Cadillac; Arthur S. Lee, Corbin and Royal Tourist; Pugh Brothers, Elmore; Providence Motor Car Co., Ford; Dauer Automobile Co., Franklin; Crown Motor Car Co., Glide and Kiblinger; Aetna Bottle and Stopper Co., Grout and Maxwell; C. M. Linton, Jackson and Welch; American Motor Car Sales Co., American, Marion and Overland; Frank E. Wing, Marmon; William A. Harris Steam Engine Co., Mitchell; Edgewood Automobile Co., Northern; Flint Motor Car Co., Packard; Foss-Hughes Motor Car Co., Pierce Arrow and Knox; J. O'Donnell, Premier; William Hughes Co., Reo; Nock Automobile Co., Stoddard-Dayton; Snow Automobile Co., Stevens-Duryea; Pawtucket Automobile Co., Studebaker; Central Automobile Exchange, White and Stanley; Whitten Motor Vehicle Co., Rambler.

The Villers Co., optical supplies; Thompson Art Co.; Belcher Loomis Hardware Co., engine supplies; The Angier Co., accessories; Aspinwall Hardware Co., marine supplies; William A. Harris Steam Engine Co., engines; Waite Auto Supply Co., accessories; B. S. Clark, portable houses; Post & Lester Co., accessories; A. W. Harris Oil Co., lubricants; Blanding & Blanding, Foss-Hughes Motor Car Co., commercial vehicles; John A. Gammons; Nonpareil Brass Co., accessories; Visor Knitting Co.; Combination Ladder Co., automobile chemical engine and accessories; J. B. Draper Co., robes; Vaccum Oil Co., Mobil oils; Eutaw Supply Co., accessories; American Locomotive Automobile Co., commercial vehicles; Walter R. Harris, marine engines; Century Optical Co., goggles; B. A. Swenson, motorcycles; L. F. Pease Co., tents; Ira N. Peck, ball bearing tires.

Hillhouse Case Settled at Last.

An automobile upon which the duty already has been paid cannot again be taxed the full value upon its re-entry into this country, even though extensive repairs have been made while abroad. In the hard fought case of J. T. B. Hillhouse, acting for Mrs. Collis P. Huntington, the United States Supreme Court on Monday denied the Government's application for a writ of certiorari, deciding that cars brought back to America after being extensively repaired can be appraised only for the new parts and not as a unit, as contended by the New York customs officials. The rate of duty is set at 45 per cent. The refusal of the Supreme Court to consider the case also has had the effect of affirming the lower courts in holding that an automobile's use abroad for one year need not be consecutive. In other words, two periods aggregating more than one year will entitle a machine to free entry, according to the interpretaiotn of William J. Webster, one of the attorneys.

To Lubricate Enclosed Mechanism.

Sometimes such of the enclosed mechanism of the car as the drive shafts, rear axles, and clutch shafts, are provided only with small holes closed by pipe plugs through which the lubricant must be injected at rare intervals, these openings being so small and so inconveniently located that it is extremely difficult to force grease into them by means of "gun," because of the small area of the channel through which it must pass. A good tip for accomplishing this object, is to screw into the hole temporarily an ordinary compression grease cup by means of which a full charge of lubricant may be inserted with absolute certainty of its finding its way to the very bottom of the cavity. This method frequently may be employed where it would be impossible to use the ordinary gun.

KANSAS CITY SHOW ALL AMERICAN

With Foreign Cars Barred the Display Still is Large and Attractive—Typical Decoration of the Hall.

Kansas City is a typical American city—a place of American people, American cattle and American ideas. This week, in Convention Hall, a thoroughly American show is taking place.

American cars only are displayed, the reason for that being that the Kansas City Automobile Dealers' Association is so impregnated with patriotism that it passed a resolution that cars of American manufacture only would be allowed on the Convention Hall floor, which explains why several dealers who handle foreign cars in Kansas are holding shows in their own salesrooms.

The show opened on Monday night, 3d inst., and will continue until Saturday night. The decorative scheme carries out the idea that the show is distinctly American and decidedly Southwestern, the latter idea being exemplified in the depiction of the great State seals of Missouri, Kansas, Nebraska and Oklahoma. In the effort at localization road scenes in and around Kansas City are much in evidence. The Missouri spirit, "you've got to show me if American goods are good enough for the American people" predominates. The exhibitors are:

Buick Automobile Co., Buick; Central Auto and Livery Co., Thomas; Fletcher Cowherd, Jr. Auto Co., Royal Tourist, Corbin, Stanley and Rauch & Lang; Deere Plow Co., Moline; Dempster Machine Co., Locomobile; Ettwein Motor Car Co., Stoddard-Dayton and Welch; Holcker-Elberg Carriage and Rubber Co., tops, bodies and wind shields; Jackson Motor Co., Jackson; Kaw Valley Auto Co., Mitchell, Premier and Mason; Maxwell-Briscoe Automobile Co., Maxwell; Midland Motor Co., Peerless, Pope-Hartford and Pope-Waverly; Missouri Valley Automobile Co., White and Reo; E. P. Moriarity Co., Packard, Stevens-Duryea and Woods; Palace Automobile Co., Pierce, Oldsmobile and Franklin; Rambler Automobile Co., Rambler; Richter Bros., Moon; Studebaker Bros. Mfg. Co., Studebaker; Baltimore Auto and Livery Co., Pullman; Cowle Electric Co., accessories; Diamond Rubber Co., Diamond tires; Ettwein Motor Co., Auburn; Fidelity Oil Co., lubricants; B. F. Goodrich Co., tires; Kansas City Automobile Jack Co., automobile jacks; Loeffler-Avery Co.; Mercantile Lumber and Supply Co., tires; Morgan & Wright, tires; Moriarity Co., accessories; Schacht Mfg. Co., motor buggies; Sellers Cycle Co., motorcycles; Sprague Umbrella Co., fronts and tops; J. H. Wittman, accessories; Wagner Motorcycle Co., motorcycles; Factory Sales Corporation, accessories; S. F. Bowser & Co., Inc., gasolene starage outfits; Fisk Rubber Co., tires.

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FROELICH LETS HIS TONGUE WAG

"Bargain Dispenser" Airs His Views of Chauffeurs and Other Things and Makes Terrifying Threats.

When, on Friday morning, 7th inst., the last issue of the Motor World reached that part of New York City occupied by the second-hand cut price emporium doing business as the Times Square Automobile Co., there was evidence of agitation quickly followed by a rush to the telephone. Connection with the Motor World speedily was obtained and a man who said his name was Froelich heralded his presence at the Times Square end of the 'phone—four or five miles away.

Froelich announced that he had read the simple little story of the chauffeur who asserted that he had found his stolen accumulator in the Times Square establishment. Of course, Froelich never reads the Motor World! He never would have known of the story had not a friend happened in with a copy of the paper! Froelich's voice betrayed his agitation. He demanded that the man at the other end of the wire drop all business forthwith—that he "get busy, and get busy quick."

"You want to see us, and see us in a hurry," and Froelich laid strong emphasis on the word "see."

The man downtown appeared not to appreciate the Froelich idea of "seeing" or of "getting busy quick."

"What's the matter with the story?"

"It's false from beginning to end. It says that we are receivers of stolen goods."

"Does it really say so? Possibly you'd better read it again."

"It's blackmail, that's what it is."

"That's a pretty strong word. We suppose you can prove it if required. Has any one connected with this paper ever tried to blackmail you? Have you ever heard of them trying to blackmail any one else?"

"Well, you never print anything like that about your advertisers."

"Possibly because there never has been occasion for it?"

"Oh! you've got more than one crooked advertiser?"

"Can you name one?"

"Oh! you've got five or six of them. We know them."

"It's news to us. Why not name one? We certainly would like to know who they are."

"Well, we never advertised with you, anyway."

"Did we ever try to get you to do so? Has a man from this office ever even called on you?"

"Maybe he's done so and you don't know it."

"I guess we'd know it all right. But regardless of the fact, if there's anything wrong about the story you can have all the space you want to correct it, or to tell your side of it."

"Why should you print the lies of that dirty, low, dishonest chauffeur? Wridgway knows that fellow and can tell you about him. He's a crook—all chauffeurs are vile crooks and you know it."

"But we don't know it. Can you prove it?"

"Well, there's not five per cent. of them that are not crooks. They are the scum of the earth. That vile creature that told you that story came in here and—"

"Oh! then he did call and see you?"

Between further heated denunciations which probably would give the chauffeur abundant room for legal action of two kinds, Froelich admitted that the chauffeur had called in search of a stolen accumulator, but declared that he (the chauffeur) was several varieties of vile liar—"vile" was a word that seemed readily to roll off of the Froelich tongue—as the accumulator he claimed was not the one that had been stolen, but was one that had been purchased from a reputable man who could be produced.

"Do you know who we are?" asked Froelich, who proceeded to answer his own question. "We are not the Manhattan Storage Co."—a rival "bargain" concern with a history which, like the Times Square company, advertises "We are the largest dealers in the world," and for which he expressed considerable regard. Then he detailed the great volume of business his concern had transacted. It was "away up in the pictures." The Times Square company had bought $40,000 worth of tires from one company and $117,000 from another, and had the receipts to prove it. Froelich meant to write both of them, intimating plainly that he meant to say that if, thereafter, they advertised in the Motor World, he would not buy from them again.

"Isn't that a species of blackmail?" asked the tender voice at the Motor World end of the wire.

"Well, I'll just write them, calling attention to your story," Froelich replied in a suddenly qualifying tone.

But before he got through Froelich let it be known all the other varieties of things he proposed doing to the Motor World. He intended to call down on it the United States government, that is, the postal department; he would see the district attorney; he would sue, sue, sue, and never, never, or hardly ever, let up.

Assured that any and all of those proceedings were within the privileges of every man, he was asked:

"Anything more?"

"Oh! you'll hear from us before the afternoon is over," was his final flourish.

The afternoon came and went—also five other afternoons—but the promised message has not put in an appearance. As, however, it is not the desire of the Motor World to present but one side of a case, Mr. Froelich's story is chronicled substantially as he told it.

The Froelich brothers are the active managers of the Times Square establishment. Previously, they operated in Philadelphia as the Delaware Rubber Co., which enjoyed an interesting career, and an interesting finish. Though gone, it is not, however, wholly forgotten by quite a few persons.

Imports Shrink More Than a Million.

Throughout last year the business of importing foreign cars into America suffered to a material extent. The valuation of the 1,093 cars brought into this country is given as $3,157,168, as compared with the $4,416,048 declared during 1906 as the value of 1,295 cars. The average value per car, based on declared value at ports of entry, has thus fallen from $3,410 in 1906 to $2,946 in 1907. That the markets for cars and component parts of cars are more or less disassociated, is shown by the fact that the $650,000 investment in foreign parts of 1907, was something like $150,000 greater than the corresponding figure of 1906. By way of contrast, it is worthy of note that the American export business for last year was stronger by some $1,950,000 than that of importation during the same period.

France has retained the lead in supplying the American agents with cars, no less than 835 machines having been entered during the year. This is about 100 less cars than were shipped to this country from the same source during 1906, however. The United Kingdom and Italy stand equal on the year's total, with 91 cars apiece, while Germany's contribution amounted to 53 machines. The remaining importations were from scattered sources. Each of the countries named has suffered a depreciation in its exports to America, that of Italy coming next to France. England's trading was only 6 cars less than during 1906.

Shanghai Dealers Handicapped.

"At the present time there are 111 licensed motor cars in use in Shanghai, 75 per cent. of which are of American manufacture, the leading makes being the Oldsmobile, Columbia, Reo and Rambler. The European cars are mostly of French and English make, but there are in addition a few German and one or two Italian cars," writes Consul General Charles Danby, of Shanghai, in a special letter to the American Exporter.

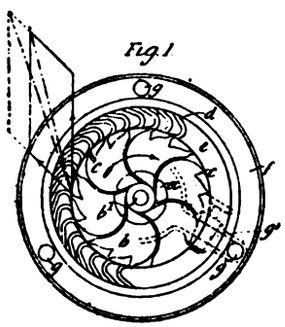
"Local dealers complain that a great drawback to increasing business in the automobile trade is found in the practice of manufacturers, who will quote the prospective individual buyers the same terms and prices that they quote to their regularly appointed agents, and that this is one of the principal reasons why the sale of American made cars is not pushed harder in Shanghai. They feel that if the manufacturers wish their cars sold in Shanghai they should offer some inducement to local dealers to get the business."

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SIMPLICITY IN HYDRAULIC CLUTCH

Turbine Principle Applied with Reversed Employment of Two Essential Parts —The General Arrangement.

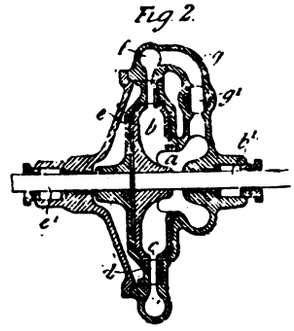
In its ideal form, the master clutch of the motor vehicle should be of such a nature as to permit perfectly smooth action at any and all speeds, whether of motor or car, and regardless of load conditions. Because of its nature and purpose, moreover, it should be of the simplest possible construction. It is interesting therefore, to learn that the most recent development along the attractive line of the hydraulic clutch takes the form of the outward flow turbine and comprises but three essential parts. These are the driver, corresponding to the stator of the ordinary turbine, the driven part, corresponding to the rotor of the regular turbine wheel, and a regulating valve, which



controls the passage of the active fluid through the other two portions of the device, thus controlling their relative motion. This remarkably simple conception is the invention of Edmund S. G. Rees, and is being exploited by the Rees Roturbo Development Syndicate, of Wolverhampton, England.

Structurally, the functions of rotor and stator are reversed in this case, the action being exactly opposite to that taking place in the power turbine, and corresponding to that carried out in the turbine pump. The "impeller," as the driving member is called, is of the pressure producing type, and is keyed to the crank shaft of the motor. As rotated, it serves to inject a stream of fluid against the vanes of the turbine wheel, which performs the part of a follower. The two parts are so contrived that the fluid circulates between them, and its passage is controlled by the by-pass valve, the relative speed of the two consequently being variable within wide limits.

The general arrangement is apparent from the two illustrations, which are, respectively, a transverse and longitudinal section. The fluid, which may be oil or glycerine, is admitted to the "eye," a, of the pump element, b, which is keyed on the crank or driving shaft, b1, and has outwardly directed nozzles about its periphery, c. From these, the fluid is discharged at a velocity depending on the speed of the driving shaft, into the vanes or buckets of the turbine wheel, e, the angle of the working surfaces, d, being such as to deprive it of its energy by setting them in motion. The turbine is keyed to the driven or propeller shaft, e1. The discharge from the turbine pesses throug the outlet pipe, f, which communicates with the inlet. The rate of dis-



charge, being controlled by the throttle, g1, of course, regulates the rate of transmission of the fluid, and hence inversely, the speed of the driven shaft. The device is self-contained, free from end thrust and should not prove cumbersome.

Napier Goes in for Motor Cabs.

There is no part of the world where the manufacture of motor cars has attained any considerable proportions that is not at present infected with the desire to produce low-priced vehicles of the rough-and-ready order suitable for cab service. England is no more behind the times in this respect than Continental Europe, but it is somewhat surprising to find that the Napier Co., which has for several years been such a strong exponant of the six-cylinder principle, has gone in for the construction of a twin cylinder motor cab of the light variety mentioned.

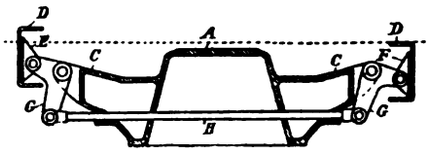
The power plant of this machine is of the unit type, the base supporting the 3¼-inch cylinders, being rigidly bolted to the gear box and the aggregation suspended from three points on the frame. The change speed gear is of the progressive type and affords a direct through drive on the highest gear. Forced water and lubricant circulation also are features of the plant.

An unusual point in the design is the use of wire wheels. Otherwise, however, the mounting follows the lines of ordinary practice, the rear live axle, as well as the front wheels running on ball bearings, and the chassis being suspended on semi-elliptical springs. The wheel base is 96 inches, and a turning radius of 25 feet is made possible by the design of the steering gear. The overall length of the vehicle is 11½ feet, the road clearance is 10 inches, and the height of the frame sills above the ground is 24 inches. The machine is being turned out at the Acton works of the company, and plans are under way for producing it in large quantities.

DESIGNED TO PREVENT "WEAVING"

Suspension Which Counteracts Differential Movement in Sides of the Frame—How the Effect is Secured.

Up to this time the only method of safeguarding the motor from the effects of "weaving" in the chassis frame has been to use some adaptation of the three-point suspension principle. This system, while largely used, does not always lend itself perfectly well to the design of the machine in other respects, and also may be open to question somewhat when it comes to the point of absolute stability upder heavy vibration stresses. On this account the new motor suspension designed by F. H. Royce, inventor of the English Rolls-Royce car, is more or less interesting. It provides for a certain limited amount of differential movement between the two side members of the frame without in the least affecting the position of the motor. The effect is secured by adding to the usual sup-



porting brackets, a linkage consisting of two bell crank levers and a tie rod.

As will be seen from the illustration, the crank case and engine bed, A, is hung from the two frame members, D-D, by means of the two arms, C-C, as is ordinarily the case. The arms, however, instead of being attached directly to it, are connected by means of the horizontal arms of the two bell cranks, G-G, the lower extremities of which are connected together by the distance tie rod, H. It will be seen that as a result of this any tendency to elevate one side of the motor is compensated by a corresponding tendency to elevate the other side while lowering the first with relation to the frame, the linkage being so contrived as to bring this about. The arrangement while tending primarily to relieve the motor of unnecessary stresses also serves to distribute the vibration and torque thrusts upon the frame and so acts in a dual capacity.

Prussia Plans a Testing Laboratory.

A state automobile testing laboratory suitable for carrying out all sorts of experiments relating to the advancement of motor traction, is soon to be established at the Technische Hochschule in Berlin. In his budget for 1908, the Prussian Minister of Education includes the sum of $7,500 for the establishment of such a department. The money will be spent in adapting and perfecting the equipment of the laboratory already existing at the school.

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COMPRESSED AIR AS AN AUXILIARY

Utilized for Alternate Power as Well as for Starting—Novel "Mixed" Cycle in an Ingenious System.

Several methods are in vogue whereby compressed air is made use of in starting the internal combustion motor which is used to drive the car, and in several instances it has been proposed to extend the principle in such a way as to provide in the compressed air an auxiliary to the motor sufficiently powerful to be used for starting the car as well as the motor, or for assisting the latter when overloaded. So far as

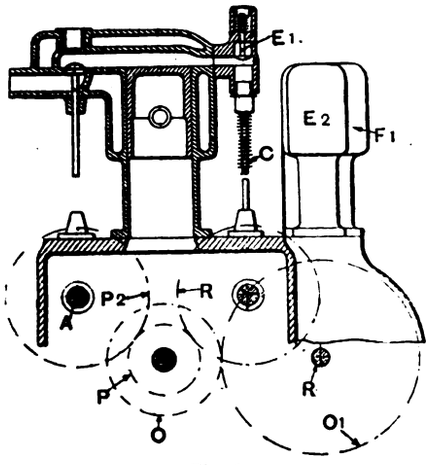


Fig. 1

is known, none of the latter type ever have come into current useage. The apparent feasibility of the idea is so appealing, however, that it is not surprising to learn that it continues to lure inventors. The most recent development of it is found in the new six-cylinder Berliet "Marche-Mixte" motor, which is known as one of the "novelties" of the present winter by the French motoring publications.

Basically it consists of an ordinary sextuple motor with twin cast cylinders having the ordinary valves mounted on one side and actuated from a single cam shaft in a perfectly regular manner. Mounted on the opposite side and at the rear, is a two-cylinder, two-stage, double-acting air-compressor which is capable of supplying air to a charging reservoir at a pressure of 1,400 pounds per square inch, or thereabouts. Leads from this connect with a manifold running along the tops of the gas cylinders on the left side of the engine, the connections being made by means of siamesed ports cast in special valve chests which are bolted to the cylinders.

The general arrangement is shown in the accompanying illustrations in which Fig. 1, is an end elevation of the motor, looking toward the rear and showing the compressor cylinders, E2 and F1, which are necessarily of different diameters. The gears, O-O1, drive the compressor at half the speed of the crank shaft, while the group, P-P2-R, operate the cam shaft, A, and the valves, C, employed to actuate the auxiliary valve-gear. The arrangement of this system is shown in Fig. 2, in which it is apparent that the chamber, F, serves to distribute the air to the two cylinders of the group through the action of the main valves, C, which are worked from the cam shafts, D, below, and the check valves, E-E, which serve in the capacity of automatic inlets to the ports, H-H, leading to the cylinder interiors. The valves, C, serve merely for purposes of timing, and admit the air through the ports, G-G, to the secondary and automatic valves below.

The cam shaft, D, is made to be displaced longitudinally, in order to throw its cams, N-N-N-N, into and out of action according to its position, thus controlling the use of the air in the cylinders. An extention of the cam shaft beyond the driving gear, is fitted with a piston, K, riding in the cylinder, J, and is held normally to the left, or in the out-of-gear position, by the spring, L. Whenever air is admitted to the chambers, F, it is by-passed to the pipe, M, thus serving to force the piston, K, over sufficiently to operate the cam lifters and the valves, C. In this way the air system is thrown into and out of operation by manipulating the air-throttling pedal.

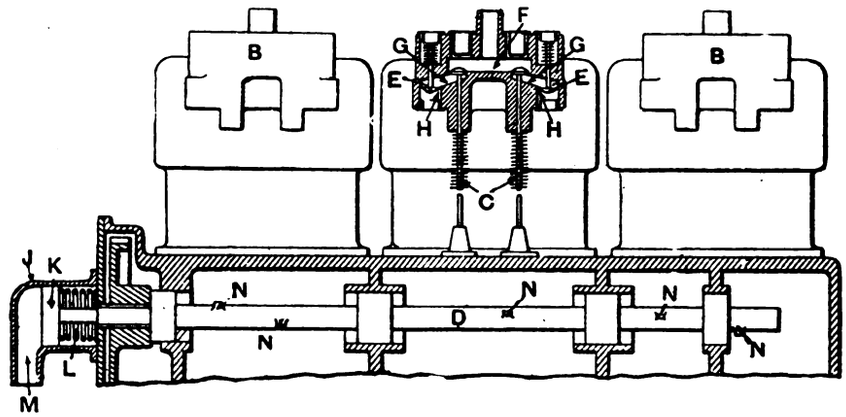


Fig. 2

In starting the car from rest, it is necessary merely to admit air to the cylinders by way of the auxiliary valve chests, F, when the pistons are put in motion by the combined thrust and expansion of the air. The air valves are made to open only during the third or working stroke of the cycle, so that the action of the regular valves need not be interferred with in the least. When the carburetter throttle is opened, the suction stroke draws in gas in the usual way, and the regular cycle is taken up without further manipulation.

If the air throttle is held open after the regular operation of the motor has commenced, the effect is to increase the mean effective pressure of the working stroke owing to the pressure of the air at the beginning of the stroke, and its expansion during the interval prior to the release of the exhaust. The heat of the burning gas effects a "regeneration" of the compressed air, which is required to pull up the efficiency of the air cycle, and naturally, the presence of an extra amount of pure air in the cylinder has no deleterious effect on the burning of the gas, so long as the mixture has been formed properly and compressed in a homogeneous state, as is claimed.

For starting under air pressure, the reservoir pressure of 1,400 pounds per square inch is reduced to somewhere between 40 and 50 pounds, while for running on air alone, as may be done when slow speeds are required, a pressure of from 100 to 140 pounds is used. During the operation of the motor as a "mixed" air and gas engine, the intitial air pressure must be raised to something above that of the explosion, which is easily done with the high receiver pressure carried. The advantages claimed for the system are: automatic starting of the motor, simultaneous starting of the motor and the car, propulsion by compressed air alone, propulsion by internal combustion alone, propulsion by the "mixed" system, instantaneous engine braking, and instantaneous engine reverse.

The braking effect is secured by permitting the car to drive the air compressor through the motor, when both gas and air are shut off, while the reversal may be accomplished by means of the air alone. Obviously, with such an arrangement, the need of the usual clutch and change gears is reduced to a small and merely nominal capacity.

Kerosene for Removing Rusty Nut.

It seldom happens that a nut which is "rusted" in place cannot be removed if soaked for a sufficient length of time in kerosene oil. It is often difficult to apply the oil in such a way that it will reach the roots of the thread, however, and frequently the rust remains untouched even after a long period of treatment, on this account. A good way of insuring its proper distribution is to bind a thread of cotton waste about the affected part and saturate it with oil. When this has been done it is possible to keep the rust in a moistened condition for as long a period as may be required to loosen it.

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FRANKLIN SHOW AN OBJECT LESSON

Cars, Materials and Processes Included in the Exhibition—Interesting Tests Given with Ingenious Devices.

For originality of conception, thoroughness of execution and in itself an idea of real value to every one interested in automobiles, it is doubtful if there has ever been a more effective demonstration than that given last week by the H. H. Franklin Mfg. Co., of Syracuse, N. Y. In brief, it was a "Franklin Show"; the Alhambra, the largest local hall being hired for the purpose. Within its walls was a display of Franklin cars of every style and kind and in addition, exhibits of practically everything that enters into their construction; the processes by which everything from the raw steel to the finished car is selected and tested and parts in bewildering confusion shown in all stages of completion.

Several demonstrating devices also formed part of the show. Quite the most ingenious was one designed to test the Franklin principle of light weight. It was a toboggan sort of an affair with two runways. Two miniature machines, one a Franklin, the other designed to resemble a water-cooled car of the same power and whose weight was figured out in corresponding relation, were placed at the foot of the runways. To the front axle of each was attached a string leading to the top of the structure and to the ends of which were attached weights of equal size. These weights, evenly released, caused the machines to start to mount the grade, and while it could be seen that both started evenly, the Franklin, of course, shot away from its competitor in impressive style. To show that there was no deception regarding the matter the machines were transferred, as were likewise the weights, and upon request each were weighed and the comparison proven. It was a most interesting experiment and one that the company intends to have placed in all of their branch houses, where the doubting Thomases can dissect it to their heart's content.

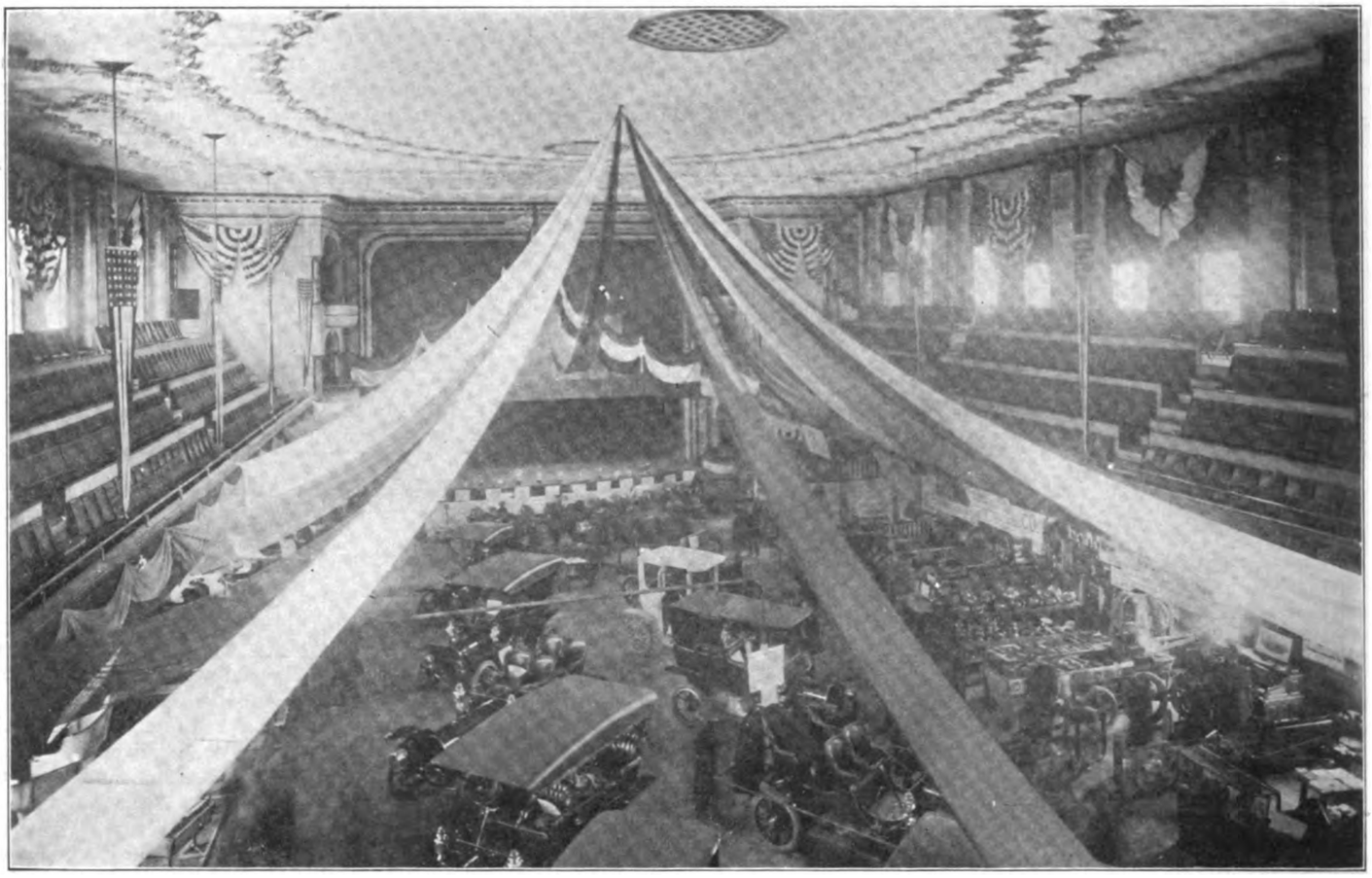
Another interesting demonstration was a Franklin car, each wheel of which was placed upon separate scales, the total proving the advertised weight and showing its distribution.

The large stage itself was transformed into a lecture room with a platform mounted on one end. On this platform was a large stereopticon upon which were thrown large sized pictures showing the development of the automobile as a vehicle, a lecturer reciting its history and many interesting facts concerning it. Later, was shown the beginning of the Franklin company, its progress, with picture after picture of the new factory and its various impressive completion. The stage, of course, was darkened by the dropping of the curtain and the lecture itself was of interest.

Admission to the building, to the lecture and everything else was free and that it was appreciated was proven by the fact that on Thursday, the opening day, the attendance was estimated at about 6,000.

Incidentally the only thing within the hall not a part of the H. H. Franklin Mfg. Co. was a tea booth, presided over by several ladies, the proceeds of which were devoted to a local charity.

From this new form of publicity it would appear that sales manager V. E. Minich is bringing to bear some of the methods of the National Cash Register Co., with which he was long connected.



GENERAL VIEW OF THE STANLEY SHOW IN ALHAMBRA HALL, SYRACUSE

The Horn for the Dilemma.

When it is absolutely necessary to have a funnel, in the event of a roadside "panne" where none of the regular sort is available, it is a trick requiring but a moment's time to remove the horn from the car, disconnect it, and take out the reed, after which, it will be found to serve the purpose very well indeed. In many instances, it will be more useful than the rolled-up paper cornucopia which is usually suggested at such times.

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HINTING AT HEAVIER TAXATION

State Engineer Skene Claims that Automobiles Increase Road Expense—What He Says in Annual Report.

Taxation of automobiles is likely to be one of the most thoroughly discussed topics before the New York State legislature during the current session. Of course the outcome is problematical, and it may be that the scheme of graded taxation proposed by the New York State Automobile Association will be adopted only so far as the matter of gradation is concerned, and with heavier rates. That such a probability is a strong one is indicated in the annual report of Frederick Skene, State engineer and surveyor.

"I deem it my duty," Mr. Skene says, "to call your attention to the injurious effect of rapidly driven power vehicles upon the public highways of this State, especially those of macadam surface. The question cannot longer be ignored." He says further:

"Ten years ago the Higbie-Armstrong bill became a law, as the first notable effort of the State to break away from the antiquated methods in vogue during the previous century and give to its citizens well built and permanent highways in return for the money expended on their construction. This law was not placed upon the statute books without a 20 years' struggle of the few advocates of improved highways, led by the League of American Wheelmen, then a strongly organized body of users of roads.

"The natural reluctance of the people to try expensive experiments and to make costly innovations—although the success of macadam roads had been proved in adjoining States—made necessary a long campaign of education before the law could be passed. The leading argument was that the farmers would be better provided for in marketing their crops. To this end they were permitted by the law to petition for a section of highway to be built in front of their holdings and were assessed according to their benefits, or practically according to their frontage, in partial payment therefor. At that period the use of the highways by automobiles to any considerable extent was neither foreseen nor considered.

"It is only within the last two or three years that the remarkable increase in the number of automobiles as well as in their weight and speed has made noticeable their effect upon the public highways. This damage appears to be caused in two ways —first, by the so-called suction of the broad rubber tire of a swiftly moving wheel upon the finely comminuted material of the wearing surface and binder, causing it to be displaced and thrown out to the rear, thus exposing the jagged corners of the top course of macadam, which are in their turn reduced to fragments and removed from place by the same agency; and, second, by the direct picking action of numerous devices now used to roughen the surface of the tire, and thus obtain a stronger hold upon the smooth surface of the finished road; by the use of chains and other appliances, termed in general non-skidding devices and intended to prevent side-slip of the wheels, especially in wet weather, or at high speed, or at turns in the road.

"It is to be observed that speed is an essential element in causing the injury in both the cases named. The higher the speed of the machine the greater is the injury inflicted. The law now permits no greater speed than 20 miles an hour upon the open highways of the State, yet it is a matter of common knowledge that this law is "more honored in the breach than the observance."

Raiding Unattended Automobiles.

Raids on cars left standing in the streets of New York City were begun under direction of the street cleaning department on the evening of January 22. The first onslaught was made from Station B in West Fifty-second street, under the lead of District Superintendent Denice, who rode in a buggy. A truck also was included in the raiding equipment.

The first capture was a car owned by the Automobile School of America. It was found "derelict" at Forty-ninth street and Seventh avenue. The detachment was halted, the truck was backed to the automobile, the two vehicles were connected and the chauffeur who accompanied the raiders took his place at the wheel of the car. The march to the encumbrance yard at West Fifty-sixth street was begun despite the protests of a man representing the school, and the procession was accompanied by the usual crowd.

The raiding party did not interfere with private automobiles nor with those standing in the streets before the salesrooms of agents. Visits were made, however, at each of the garages, which previously had been notified that it is a violation of a city ordinance to leave an automobile in the street unattended for a longer period than fifteen minutes. According to Deputy Street Cleaning Commissioner Edwards, even the car of a physician thus left is liable to seizure.

Plan to Raise Funds for Sign Boards.

Dealers in San Francisco have hit upon a new plan to raise money to carry on the signboard work in that section of California. The scheme is to interest owners of automobiles to the extent of giving up the pleasure of riding one day during the next season and pay the cost of gasolene and oil for a 100 miles trip. The idea is to run the cars around the bay and charge $5 per person for the trip. If a majority of owners offer their cars for the purpose something like $30.000 can be raised.

AUTOMOBILIST IN FELON'S CELL

Severe Sentence for Newark Dentist Whose Recklessness Cost a Life—Stern Warning for Others.

For the first time in this country, an automobilist who had caused a fatal accident and who, lacking the courage to face the consequences, had hurried away, leaving his victim to his fate, has been given exemplary punishment. Dr. Walter H. Morris, a dentist of Newark, N. J., is the man concerned. He will have 18 months in the Essex county penitentiary in which to reflect on the results of his folly and inhumanity.

Morris caused the death of Marcus J. Jacobs, a theatrical manager, by running him down on Broad street, in Newark, on September 26, 1907. Some time after pleading "not guilty" to an indictment charging him with manslaughter, Morris withdrew his plea and pleaded "non vult." When arraigned before Judge Ten Eyck for sentence on the 29th ult., his counsel, Samuel Kalisch, made an appeal for clemency, which was met by the request of Public Prosecutor Young for the imposition of a sentence sufficiently severe to act as a deterrent upon automobilists addicted to reckless driving. In acceding to the prosecutor's request Judge Ten Eyck made it plainly evident that, while accepting the defendant's disclaimer of criminal intent, he regarded his conduct in the matter as of a criminal character.

"After drinking intoxicating liquors with your companions," he said, "you drove your high powered automobile at great speed through Broad street, in the center of the city, at about 4.30 p. m., when the street was crowded with people. Mr. Jacobs had just stepped off a trolley car and was about to go to the sidewalk when your machine struck him with great force, while you were going at high speed, and without giving any warning signal. You knew he had been struck and probably seriously injured, but continued at high speed down Broad street and out of the city, doing further damage later on.

"It was not until several days later that you concluded to surrender yourself to the public authorities. Such conduct was not only the extreme of disregard for the safety of others, and a cowardly violation of common decency, but your recklessness supplied the place of the civil or criminal intent required to constitute a criminal act, and makes you responsible under the criminal law for manslaughter. Both as a punishment to you and a warning to others using the highways that gross recklessness resulting in injury to others will be adequately punished it is the duty of the court to impose a severe penalty in this case.

"The sentence of the court is that you be

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confined for the term of eighteen months in the Essex county penitentiary and from thence until the costs are paid."

His plea of "non vult" deprives Morris of the right to appeal from this sentence. In addition to serving his time in prison he has to answer in a civil suit for $100,000 damages, brought by the administrators of the Jacobs estate, and in another for $5,000 damages, brought by Louis Shapiro, whose peddler's wagon his car demolished during his flight from the scene of the more tragic accident.

Enormous Penalties Proposed.

Of the many automobile measures placed before the Massachusetts legislature to be considered during the present session the more important, including those bills that are likely to receive favorable consideration, have been outlined in the Motor World. Among the others there are some that, even in Massachusetts, have about as much chance as a snowball would have in a place where the fuel supply is said to be inexhaustible. Some of them are worthy of mention for no other reason than their extreme absurdity.

One bill of this sort is evidently the production of a mind dominated by a rabid form of motorphobia. It provides that a motorist may be fined $1,000 and imprisoned for twelve months on conviction of injuring a person or a corporation; the fine is increased to $3,000 and the term of imprisonment to three years for gross negligence; and for causing loss of life the fine is made $10,000, with imprisonment for ten years. The same bill provides a fine of $1,000, with one year's imprisonment for not keeping to the left in passing a carriage going in the same direction! The bill has been referred to the committee on roads and bridges, where it is believed to be as safe as if in the hands of a committee on the legislative morgue, if such a committee were in existence.

The bill proposing to give to the selectmen of Nantucket the power to exclude automobiles from the island by closing roadways in the town, without possibility of interference by the State highway commission, probably has got as far as it will go. There is some surprise that it was passed by the House of Representatives, and no expectation that it will get through the Senate. That it is special legislation is not more apparent than that it would open the way for taking the automobile question out of the hands of the legislature and placing it at the disposition of the various city councils and town boards to settle as each might see fit. If Nantucket should be granted what the selectmen have sought to obtain through this bill there are other old fogy towns that would bob up with their "me too!" Even if every city and town should not ask for such legislation, there would be a sufficient number to destroy the uniformity of automobile regulations in Massachusetts.

DANGER IN THE FORCE OF HABIT

Experience of a Motorist Who Suddenly Switched Types of Transmission—How He "Put His Foot in it."

They were sitting in a corner of the club room and tales of personal experiences served to kill time:

"Did you ever switch suddenly from your sliding gear type and try to drive a car equipped with a planetary transmission?" asked one of the old timers, who was himself a driver and not dependent on the professional chauffeur.

Receiving no reply, he continued, "I did. I tried it, with disastrous results. The incident made so decided an impression on me that I remember the slightest detail.

"I was sitting just about where I am now one day a year ago, when I was summoned to the phone, an intimate friend was on the other end of the wire, and he unfolded a terrible tale about being swindled in the purchase of a new car, had had a lot of trouble with it the day before, and finally in the late hours of the night had left it in a barn on the outskirts of the city and was very anxious for me to look it over before some dishonest employe of the manufacturer got a chance to make a temporary repair and then prove the car was all right. My friend couldn't go with me, he said, as he was subpoenaed in court.

"I consented readily enough and an hour later was beside the car. I found there was nothing worse than a loose battery connection, which had, of course, caused irregular firing, and having tightened this, I soon had the engine turning over.

"As he and I stabled in the same garage I thought I might as well run the thing home for him. I got into the seat and though, of course, I knew it was a planetary I unthinkingly pushed the left pedal, with the involuntary impulse we have before releasing the emergency brake, and the car began to back up. I had my wits about me in a moment and realized, after I had given one of two more pressures with the intention of getting the clutch out, that there was no clutch, and if I didn't get off that pedal quick there would be 'something doin'.' I released it only to find that the release spring was broken and I would have to kick it off. Well, that was easy, and I had control before anything happened.

"My trip downtown was without incident. There were many awkward moments when I reached the busy streets, but I finally arrived safely at the garage and drove in.

"There was a little manoeuvering necessary to get into the right space, and my left foot, which I had kept religiously under me, sitting on it lest it remembered its habits and sought to monkey with the clutch which wasn't there, was again put in commission. I backed as far as I wanted to, then released the pedal, but the broken spring got in its fine work and I kept on backing.

"The necessity of doing something, and doing it quick, was responsible for the return of the involuntary motion of pushing the left pedal, and as I did this I crashed into the glass door and framework of the office, doing about $10 worth of damage to glass, woodwork and fixtures; with the crash I pushed harder than ever, and fortunately, I stalled the motor."

"Supposing the motor hadn't stalled?" queried a young man who rode only when his chauffeur permitted him to.

"Well," responded the other, "I would have definitely settled the problem that has puzled science for many generations as to what happens 'when an irresistible force meets an immovable body,'" and the speaker motioned for the waiter with a comprehensive gesture.

How the Chauffeur Cleaned the Coat.

A well known New Yorker, whose prominence and enthusiasm as an automobilist makes him a conspicuous figure in the news items of the daily press, recently bought an imported rain coat of fine texture and light color.

He had used but a few days when one rainy morning, while wearing it he sought to satisfy his curiosity concerning the queer actions of his car by a personal observation of some of its interior mechanism with the result that a large, generous application of grease was apparent on the new coat.

Arriving at the office he handed the coat to his chauffeur with orders to clean it.

The chauffeur, however, was without experience in this line of work, but knowing that gasolene was used to remove oil and grease from engines he figured it would do equally well in this case and placing the garment in a large basin, covered it with gasolene and went to dinner.

Returning about an hour later he rubbed out the spot and grasping the coat by its sleeve lifted it from the pan only to find that the glue used in the seams had dissolved and the rain coat was in pieces. He hung these on nails side by side and awaited developments.

A day or two later the owner in passing through the garage observed the decoration. With quick comprehension he realized what had happened and that his rain coat was no more. There was no word of reproof. In half sorrowful tones he remarked, "Well, there's thirty dollars more gone to the devil," and the incident was closed.

Motor Postal Delivery on Large Scale.

Motor postal delivery on a large scale is being planned in Nuremberg, where no less than thirteen mail wagons will be put into service during the coming summer. A city garage and repair shop are already in process of erection, and it is planned to increase the equipment later on as the service demands an extension of facilities.

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The Week's Patents.

871,797. Cooling System for Internal Combustion Engines. Gustavus Green, Bexhill, England, assignor of one-fourth to Francis Pelham Clinton Hope and one-fourth to Joseph Miller, Bexhill, county of Sussex, England. Filed Sept. 15, 1905. Serial No. 278,597.

1. In an internal combustion engine the combination with the cylinder of a water jacket, a radiator connected with the same and projecting beyond the surface of said jacket, said radiator comprising sets of adjacent channels for the circulation of the water communicating with the upper and lower parts of the jacket, and confined to the space immediately around the sides of the jacket, and being distributed around the same in such manner as to efficiently utilize the available space round the jacket.

871,807. Rotary Engine. Jay E. Lehman, Canton, Ohio. Filed March 20, 1907. Serial No. 363,359.

1. In a rotary engine, a case, a rotatable cylinder therein, a piston in the cylinder, annular channels having correspondingly varying depths in the end walls of the case, an endwise movable non-rotatable screw in the cylinder having its ends abutting the bottoms of the channels, and means connecting the screw with the piston whereby the piston is operated by the endwise movement of the screw.

871,868. Tire Cleat for Traction Wheels. William Galloway, Waterloo, Iowa, assignor to William Galloway Company, Waterloo, Iowa. Filed Feb. 28, 1907. Serial No. 359,706.

A traction wheel tire cleat, comprising the combination with a tire of cleat members adjustably spaced apart, said cleat members embracing and overlapping the tire tread and having inwardly projecting jaws adapted to be secured about the tire's opposite edges, the overlapping portions of said cleat members having perforations in registration with each other, a bolt adapted to be secured within the said registering perforations and across and over said tire tread, and means for removably and adjustably spacing said cleat members apart and securing them about said tire.

871,881. Rotary Explosive Engine. Adolf Montan and Joseph Seholm, Newark, N. J. Filed June 14, 1907. Serial No. 378,916.

1. A motor comprising a support, a cylinder fixed thereon, pistons operating in the opposite ends of the cylinder, a rotatable casing mounted on the cylinder and entirely inclosing the same, and means for driving the casing from the pistons.

871,883. Burner for Explosion Engines. Peter McCusker, Galesburg, Ill. Filed May 22, 1907. Serial No. 375,172.

In a burner for explosion engines provided with a heating chamber and an ignition pipe therein, a removable heat reflector adapted to be secured over the open end of the heating chamber, being formed of a single thin plate of resilient metal and consisting of a central hub smaller than the end of the chamber and outward projecting arms bent downward at their ends to clasp the outer sides of the walls of the chamber.

871,886. Reinforced Corner for Vehicle Bodies. David M. Parry and Thomas H. Parry, Indianapolis, Ind., assignors to Parry Manufacturing Company, Indianapolis, Ind., a Corporation of Indiana. Filed Sept. 18, 1906. Serial No. 335,099.

1. In a vehicle corner, a standard notched on its inner side, an end member notched on its outer end to receive the notched end of the standard, a transverse member wider than said end member notched on its inner face at the end to receive the standard and end member flush with its end, and a metal plate covering both of the outer sides of the corner thus formed said plate being continuous from one side to the other around said corner.

871,920. Vehicle Spring. Arthur Falkenhainer, St. Louis, Mo. Filed Dec. 26, 1906. Serial No. 349,367.

1. In a vehicle spring, the combination with a main spring, of a coiled auxiliary spring having a terminal coil provided with an arm arranged for slidable engagement with a member of said main spring, and means whereby said terminal coil is rigidly and immovably secured to said main spring member, substantially as set forth.

871,930. Patch for Pneumatic Tires. Gustaf Hagstrom and Emanuel Hagstrom, Lindsborg, Kan., assignors to The Hagstrom Bros. Manufacturing Company, Lindsborg, Kan. Filed Sept. 24, 1906. Serial No. 335,943.

1. A patch of the class described comprising a band to go around an inner tube having clips at its ends to engage the edges of an outer tube and provided with a flap forming an extension of one end to lie between the inner tube and a wheel rim, substantially as described.

871,945. Tire. Robert M. Merriman, Youngstown, Ohio. Filed March 13, 1907. Serial No. 362,168.

1. In combination, a soft tread tire, metal reinforcements embedded in opposite sides thereof, each reinforcement consisting of a number of strands twisted together, and lacing embedded in the tire and connecting said reinforcements and passed between the strands thereof to maintain fixed position.

871,946. Combined Speed Indicator and Recorder. George E. Mirfield, Joliet, Ill. Filed March 5, 1906. Serial No. 304,298.

1. In a device of the class described, in combination with a clock mechanism, a face plate surrounding the arbor for the hour hand, and revoluble therewith and adapted to revolve a chart, a stationary transparent clock face having the numbers marked thereon in a ring in front of the face plate, and a recording arm carrying an inscribing instrument, the latter being movable under the transparent clock face and outside of the ring of hour numerals, substantially as described.

871,949. Ball Bearing. Paul J. McCullough, St. Louis, Mo. Filed Feb. 20, 1907. Serial No. 358,401.

1. A ball bearing comprising a member consisting of a single piece which is provided with an approximately channel shaped groove that constitutes ball races, a co-operating member composed of a plurality of parts that constitute co-operating ball races, means formed in sections and arranged between said parts to hold them separated, and a pluralitv of rows of balls arranged between said races; substantially as described.

871,973. Multipart Mold for Pneumatic Tires. Friedrich Veith, Veithwerk, near Hochst, Germany. Filed Jan. 28, 1907. Serial No. 354,413.

1. A mold for pneumatic tire covers comprising a core having an internal chamber and a gutter or depression at the lower part of said chamber for the reception of condensation water, and a drain pipe leading from said depression.

872,012. Oil Cup Lubricator. William P. Phillips, Boston, Mass. Filed Feb. 6, 1907. Serial No. 356,023.

1. A lubricator having a valve spring pressed to its seat, said valve having a cap thereon, a valve casing, a screw threaded connection between said cap and the valve casing, means engaging said cap to lift the valve from its seat, a cover for the lubricator and a coiled spring interposed between and bearing against the cover and the cap.

872,031. Automobile Body. Willie O. Thomas, Riverside, and Harry G. Moore, Chicago, Ill. Filed Aug. 29, 1906. Serial No. 332,412.

1. An automobile body having side-bodies formed of sheet metal extending continuously both above and below the floor plane of the body throughout the principal length of the body, and laterally outstanding structural members rigidly secured to said side bodies below said floor plane and forming reinforcements to the transverse and vertical strength of the side bodies.

872,040. Rotary Pump. Gunnar Anderson and Richard Lundin, New York, N. Y. Filed Aug. 21, 1907. Serial No. 389,443.

1. A pump comprising a cylindrical casing having head plates secured to the opposite ends thereof, said casing being provided in its opposite ends with annular chambers and said head plates with corresponding annular chambers in communication therewith, said casing being also provided with a central longitudinal cylindrical chamber, a drum or cylinder mounted in said chamber and of less diameter than said chamber and provided at one side with a longitudinal piston member adapted to closely fit the walls of said chamber, said drum or cylinder being also provided with a shaft by which it is rotated, a plurality of longitudinally arranged cylindrical valves located in said casing and geared in connection with said shaft, said valves being positioned so as to fill the space between the outer walls of said chamber and the drum or cylinder mounted therein, said valves being also provided with longitudinal recesses, and a plurality of longitudintl chambers in said casing, said chambers being arranged in pairs at the opposite sides of said valves and being provided with ports or passages which communicate with the chambers in which said valves are placed, one of the heads of the casing being provided with an inlet pipe in communication with the annular chamber formed therein and the other head of the casing being provided with an outlet pipe which communicates with the annular chamber formed therein, substantially as shown and described.

872,075. Sparking Device. Harry A. Miller, Pasadena, Cal., and Benjamin G Gilbough, Chicago, Ill. Filed Feb. 14, 1906. Serial No. 301,103.

1. An ignition device, for the purpose set forth, comprising a cylinder adapted to communicate with the engine cylinder, a spring held gas actuated piston movable therein, a vibratory electrode extending above the base of and outside of said cylinder, a gas tight bearing for said electrode, and means connected with the piston and with the outer end portion of the vibratory electrode for actuating the vibratory electrode.

872,096. Means for Preventing Side Slip in Pneumatic Tires. Louis E. Treffiere

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and Victor J. Jehin, Paris, France. Filed March 9, 1906. Serial No. 305,189.

In a device of the class described the combination of a plurality of strips secured to the tire tread, said strips being located upon the tire in a plane co-incident with the plane of rotation thereof and in aligned rows, the strips of each row being spaced apart longitudinally at their ends and disposed upon the tread in staggered relation to bring said spaces between the ends of the strips of one row out of transverse alignment with the spaces of strips adjacent rows, said strips being provided with laterally projecting attaching ears formed to provide intervening recesses of the strips of adjacent rows.

872,133. Rotary Motor. Justus R. Kinney, Dorchester, Mass. Filed April 29, 1907. Serial No. 370,967.

1. In a device of the class described, the combination of a casing having a cylindrical chamber; an eccentric piston therein; a continuous peripheral band thereon; and means whereby said band may be adjusted about the periphery of said piston and clamped in adjusted position.

872,164. Gas and Gasolene Engine. Earl E. Wright, Mansfield, Ohio. Filed Oct. 27, 1906. Serial No. 340,833.

1. In an engine of the class described, a housing in two portions and having half bearings in their adjacent faces, cylinders mounted upon said housing, the rods spaced apart and extending through said housing and connected to said cylinders, pistons operating in said cylinders, piston rods connected to said pistons and provided with transverse slotted cross heads slidably engaging said tie rods, and a shaft journaled in said housing bearings and provided with cranks operating in said slotted heads.

872,186. Speed Recording Instrument. Cascious H. d' la Monte, Philadelphia, Pa., assignor, by mesne assignments, to International Speed Register Co., Philadelphia, Pa., a Corporation of New York. Filed March 21, 1906. Serial No. 307,235.

1. A speed recording instrument for the purpose set forth having a punching mechanism comprising a reciprocatory punch for puncturing a dial to form a record, a casing for the punch, and a plurality of combs having the outer ends thereof secured to the wall of the casing, said combs projecting inwardly, suitably spaced apart and adapted to have the dial enter between the inner ends thereof, the tines of the combs constituting guides for the punch, combined with means for actuating the punch and for intermittently varying the size of the punctures during the operation of the instrument.

872,188. Cab Fare Indicator. Charles Mascart, Paris, France. Filed Oct. 13, 1905. Serial No. 282,665.

The combination of a drum provided with means to indicate the amount of fare paid, a ratchet wheel fixed to said drum, a spring for imparting movement to the drum when the ratchet wheel is released, a lever provided with a detent adapted to engage the ratchet wheel to prevent the rotation thereof in one direction, a pawl engaging said ratchet and adapted to prevent the rotation thereof in the same direction and further adapted to impart an impulse to the ratchet wheel in an opposite direction, a lever carrying said pawl and having an upwardly extending arm adapted to be moved into engagement with the lever carrying the detent, thereby shifting said detent out of engagement with the ratchet wheel and further shifting the pawl out of engagement with the ratchet wheel, a pair of cam members, one of said members adapted to engage said arm for moving it into engagement with that lever which is provided with a detent, and the other of said members adapted to engage said arm for lowering it, thereby shifting said pawl to impart an impulse to the ratchet wheel, and means for retaining the retent and pawl in engagement with the ratchet wheel when said cam members are out of engagement with said arm.

872,213. Battery Support for Automobiles. Samuel R. Bailey, Amesbury, Mass. Filed Jan. 4, 1907. Serial No. 350,734.

1. In combination with an automobile frame, a base adapted to support the batteries thereon, a series of three suspension rods having heads at each end provided with oppositely disposed spherical shaped faces, said frame and said base each having apertures, through which said rods pass loosely, and having oppositely disposed recesses about said apertures, the bottoms of which are adapted to receive the spherical faces of said heads to permit said base to swing freely in any direction with relation to said frame, as and for the purpose set forth.

872,220. Transmission Gear. Allen P. Boyer, Goshen, Ind. Filed April 1, 1907. Serial No. 365,707.

1. The combination with the axle shafts, of gears thereon; a pair of gear shafts arranged transversely of said axle shafts; sleeves splined upon said gear shafts; pairs of gears revolubly mounted on said sleeves adapted to alternately engage said axle gears as said sleeves are shifted; pairs of ratchet clutch members through which said gears are connected to said sleeves, splined thereon; springs for holding said clutch members yieldingly in engagement with said gears; a pivoted lever connected to said sleeves for simultaneously shifting them in opposite directions, whereby the desired gears thereon are brought into mesh with said axle gears; a shifting link for said lever; a driving shaft; a pair of driven shafts arranged one at each side of said driving shaft and parallel thereto; combination universal and slip joints for connecting said driven shafts to said gear shafts; adjustable bearings for said driven shafts; connecting links for said bearings whereby they are adjusted in unison to throw them toward or from said driving shaft; a stop on one of the said connecting links for said adjustable bearings arranged to engage the operating link for said sleeve shifting lever; a plurality of friction gears of different diameters splined upon said driving shaft; means for shifting said gears on said driving shaft; and a plurality of gears of different diameters on said driven shafts, adapted to be brought into driving engagement with said gears on said driving shaft.

872,226. Spring. Chauncy T. Edgerton, Richmond Hill, and Welford J. Golden, Oswego, N. Y. Filed Sept. 10, 1907. Serial No. 392,139.

1. In a leaf spring, an auxiliary plate of less camber than the working plates of the spring and tending by its reaction to substantially reduce the free height of the spring.

872,246. Fastening Device for Pneumatic Tire Protectors. Roy H. Morris and Elvin E. Townsend, Oakland, Cal. Filed June 28, 1906. Serial No. 323,833.

1. In a fastening device for pneumatic tire protectors, a pair of blocks, each provided with a perforated ear and a longitudinally disposed flange, said perforation being conical, and the flanges being opposite each other, whereby a recess is formed between the flanges when the blocks are in position, one of said blocks being provided with a transverse screw threaded aperture, and the other one with a screw threaded lug adapted to fit in said aperture and hold said blocks together with said flanges in engagement with the rim of a wheel when in position, a nutted bolt through each ear and a hooked plate pivotally secured to the lower end of said bolt adapted to receive the perforated edge of the tire protector.

872,311. Vehicle Wheel. Emil Sutherland, Hollywood, Cal. Filed Nov. 2, 1906. Serial No. 341,728.

1. A vehicle wheel having a non-deformable rim; carrying springs interposed between the spokes and the rim and workably connecting the same together; annular plates forming hubs and carrying the spokes pivotally connected thereon; compensating springs, extending from the inner end of one spoke to the inner end of another spoke, and said springs being keyed to one spoke, and having a sliding fit in a socket in another spoke.

872,336. Internal Combustion Engine. Lucius T. Gibbs, Hempstead, N. Y. Filed May 2, 1906. Serial No. 314,742.

1. In an internal combustion engine, the combination of a cylinder, a piston, said cylinder having inlet and exhaust ports uncovered by the piston as it approaches the limit of its forward stroke, the piston having an apertured lip whereby the exhaust port after being opened, is closed during the continued forward movement of the piston, and means to withdraw the burned gases from the cylinder while the exhaust port is closed and the inlet port is opened.

872,362. Pneumatic Spring and Shock Absorber for Motor Vehicles. Albert L. Muren, Belleville, Ill. Filed Oct. 18, 1906. Serial No. 339,432.

1. In a vehicle, the combination with an axle and frame, of an upwardly projecting compression member suspended beneath said axle from said frame, a resistance member beneath said axle above said compression member and slidingly connected therewith, and a pneumatic shock absorbing cushion located between said compression member and said resistance member; said resistance member being of box shape and having a detachable wall, substantially as set forth.

872,453. Muffler. David Reid, Ithaca, N. Y. Filed July 22, 1904, Serial No. 217,680½. Renewed June 19, 1905. Serial No. 266,044.

1. In a muffler, the combination of an expansion chamber, a passage for the flow of gas opening into said chamber, means disposed in said passage for retarding the flow of gas therethrough, and means for creating a partial vacuum in said chamber.

872,472. Fastening for Resilient Tires. Otto G. Stole, Chicago, Ill. Filed Sept. 10, 1906. Serial No. 338,918.

1. A resilient tire attachment comprising a main plate metal ring having a concave peripheral portion, marginal beads at the sides of said peripheral portion, and a laterally and inwardly extending attaching web, said peripheral portion, marginal beads and attaching web being integrally formed, a supplementary plate metal ring having a laterally and inwardly curved form and its outer edge tucked into the recess between the adjacent bead and the main ring for retention, and bolts passing through the

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parts and through the wheel rim to secure the parts together, substantially as set forth.

872,505. Carburetter. George H. Gere, Utica, N. Y. Filed March 30, 1906. Serial No. 308,865.

1. The combination of a case having a depression in the bottom thereof, means for admitting a current of air to the case, means for removing a combustible mixture from the case, a vertically adjustable sleeve in the case, a nozzle in the case, an air tight tank above the case, a pipe connecting the bottom of the tank and the nozzle and having means for longitudinal expansion, a pipe extending from the depression to the upper part of the tank and vertically adjusted relative to the case by means of the sleeve.

872,512. Power Transmission Device. Joseph W. Hays, Chicago, Ill. Filed March 25, 1907. Serial No. 364,422.

1. In a clutch mechanism the combination with a revoluble driving member and a concentric revoluble driven member having aligning axes, of a series of segmental shoes arranged in circumferential order one after the other and connected to the outer one of said members, and means for causing said shoes to engage the other member one after the other.

872,527. Motor Starter. Adolph W. Manz, Chicago, Ill., assignor to Paul H. Manz, Chicago, Ill. Filed Feb. 26, 1906. Serial No. 302,922.

A starting device for motors, in combination with the motor main shaft, a lever loosely mounted on said shaft, split bearings on said shaft embracing said lever, a split ratchet wheel secured on said shaft adjacent to said lever, pulleys mounted on said lever near its ends, operative means for making traction upon said lever, said operative means consisting of a flexible and a yielding portion, said flexible portion passing over said pulleys and provided with a handle, a pawl pivoted to the lower and forming a link between the said portions of the operative means for the lever, means

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for retaining the lever in inoperative position, and means for preventing the untimely operation of said lever.

872,571. Internal Combustion Engine. Fritz Moser, St. Aubin, Switzerland. Filed Dec. 14, 1906. Serial No. 347,812.

In an internal combustion engine, the combustion of valve-actuating devices; a shaft for operating the same; a casing for said devices; a cover for said casing, said cover being formed on its outer face with an interrupted annular rib and said shaft projecting through said cover within said rib; an electric ignition device mounted upon said rib; and means mounted on the projecting end of said shaft for operating said ignition device; the interruption in said rib permitting the oil which exudes from said casing along said shaft to flow away from said ignition device.

872,645. Resilient Tired Wheel for Self-Propelled Vehicles. Edwin M. Carhart, Providence, R. I. Filed Feb. 16, 1907. Serial No. 357,625.

1. In a wheel of the character described, the combination with the rim, a pair of oppositely disposed annular metal plates rigidly secured to the front and rear sides of the rim, and a continuous annular rubber tire member having a substantially concavo-convex form cross-sectionally seated in and being supported by said plates, of a plurality of short radially extending air-tight cylinders arranged around and rigidly secured to said rim member, a suitably packed piston or plunger block movably mounted in each cylinder, its upper or head portion being enlarged and fitted to the adjacent concave part of the tire, and a continuous hoop or band of metal extending circumferentially around and being secured to the heads of the pistons, all constructed, arranged, and adapted for operation substantially as hereinbefore described.

872,732. Automobile Air Brake. James T. Johnson, Memphis, Tenn. Filed Oct. 22, 1906. Serial No. 339,937.

1. In combination with a motor driven vehicle, and brakes for said vehicle, a brake cylinder having a piston, connections between the rod of said piston and the said brakes, an air reservoir, a brake valve casing, and a brake valve in said casing, connections between said air reservoir and the brake valve casing, and between said brake valve casing and the brake cylinder, and a single actuating element for controlling the motive power of said vehicle and said air brake valve.

872,774. Motor Car. Cornelius P. A. Van Ferls and Josephine M. Kneeland, New York, N. Y. Filed May 24, 1907. Serial No. 375,505.

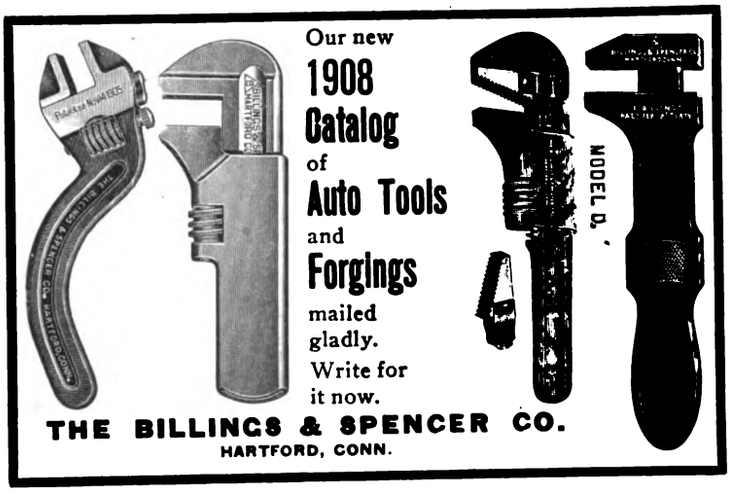
1. A car body supporting frame for a motor car and comprising opposite side frame members each of which is depressed midway of its length, and a supplementary frame provided with a rearward cross bar connected with said side frame members where depressed and provided with a downwardly bent forward cross bar connected with such members above said depressed parts, and longitudinal bars forming part of the supplementary frame and disposed in a plane substantially parallel with the depressed parts of the side frame members and connected with both parts of the side frame members and connected with both cross-bars.

872,820. Air Guide or Steering Device for Automobiles. James T. Johnson, Memphis, Tenn. Filed Oct. 8, 1906. Serial No. 337,909.

1. The combination with the running gear of an automobile, of a reservoir for fluid under pressure, a fluid receiving cylinder divided into two compartments each in communication with the reservoir, pistons in said compartments of the fluid receiving cylinder connected with the steering wheels, a steering post, and a valve interposed between the fluid receiving cylinder and the reservoir and controlled by said steering post to admit air from the reservoir to said compartments of the fluid receiving cylinder.

872,825. Apparatus for Checking or Deadening the Vibrations Imparted to Suspended Vehicles. Arthur Krebs, Paris, France, assignor to Société Anonyme des Anciens Establissements Panhard et Levassor, Paris, France. Filed March 29, 1906. Serial No. 308,769.

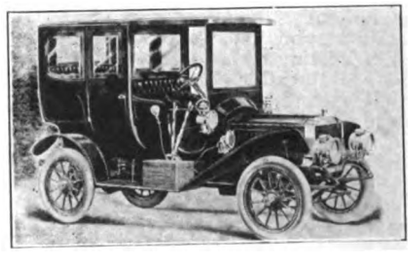
1. An apparatus of the class described, comprising a case, a movable member arranged within the case, superimposed washers alternately connected to the movable member and the case, an elastic element co-operative with the case and the movable member, and cam elements, one cam element carried by the case and the other by the movable member, and the cam faces of each adapted to traverse one another.



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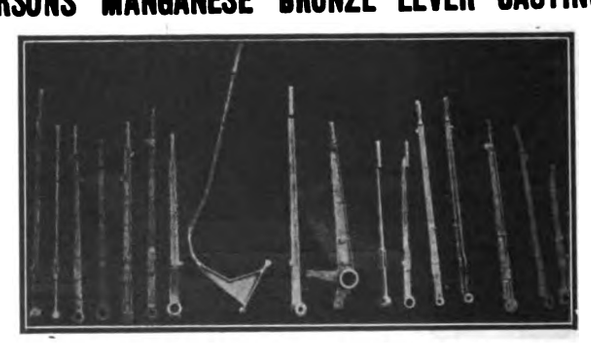
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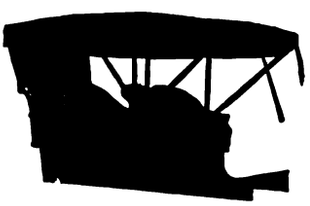
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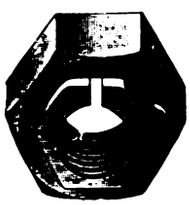
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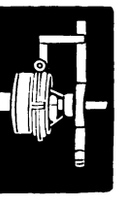
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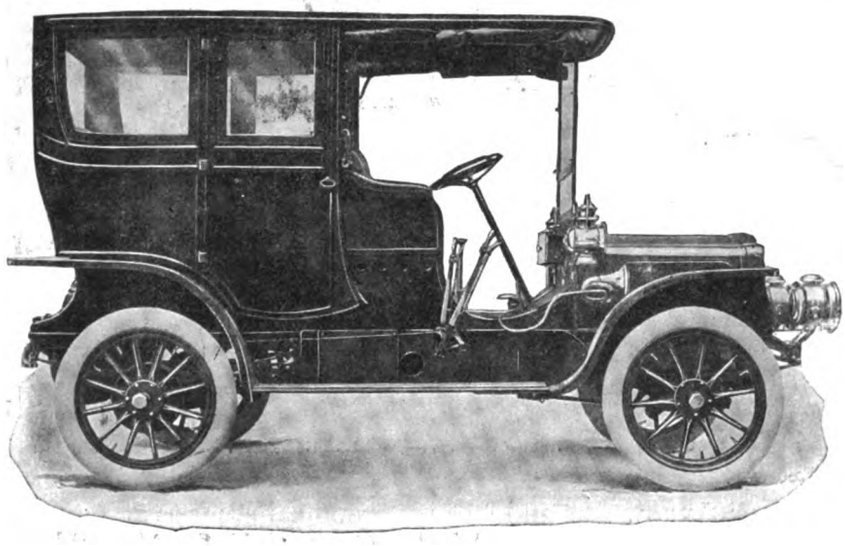
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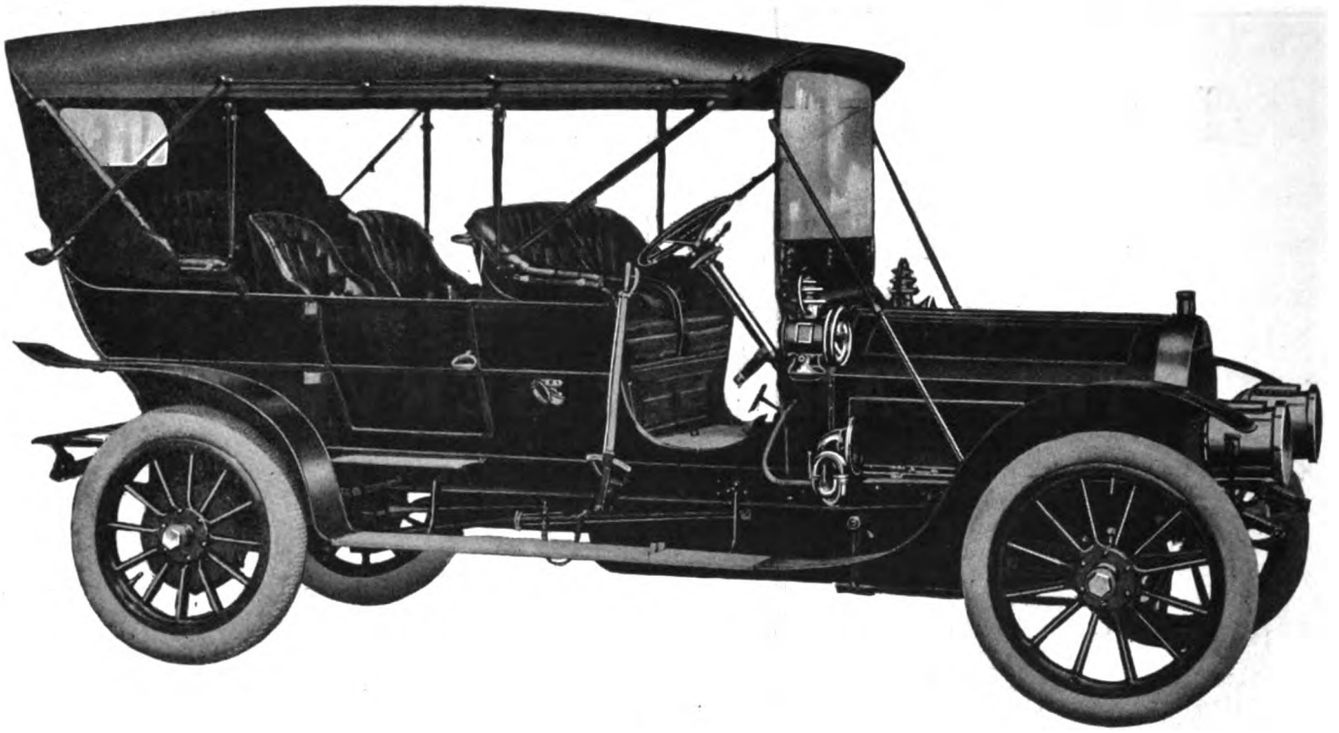
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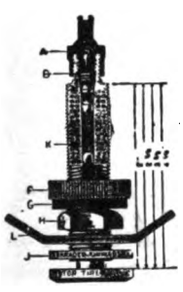
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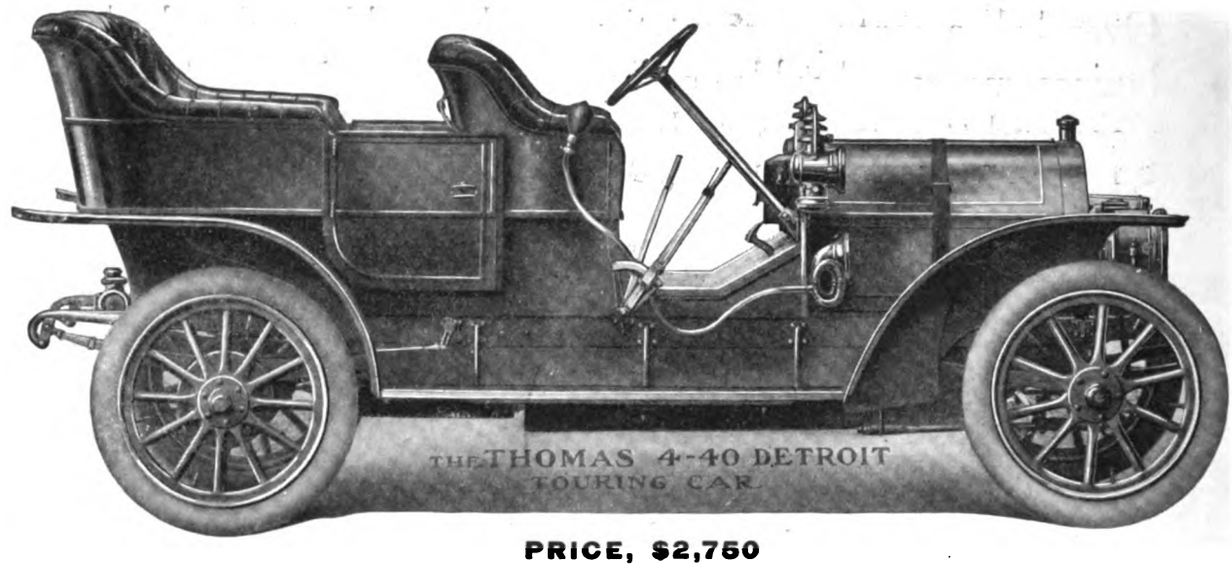
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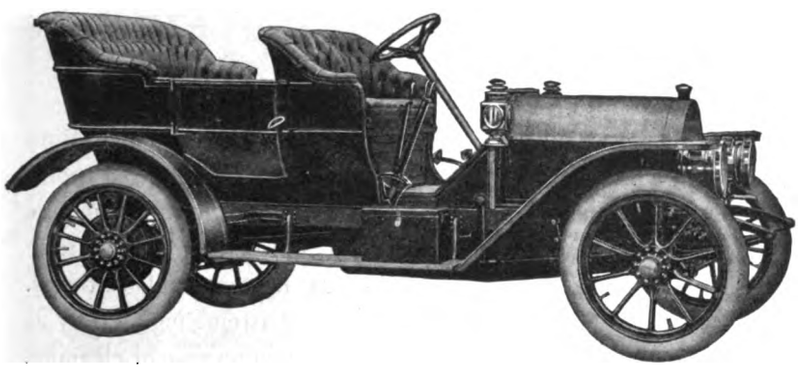
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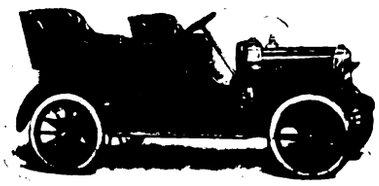
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—Afford to *buy* it because it is moderate in price.

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In demonstration, you'll notice not only that its style, finish and construction is equal to that of the extravagantly high priced cars, but that its *performance is too.*

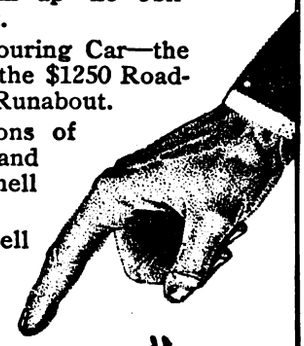
Proof is easy, Mr. Business Man.

The Mitchell Agent will be glad to take you out at any time you say. Just call him up—no obligation on your part.

Try the $2000 Touring Car—the $2800 Limousine—the $1250 Roadster or the $1000 Runabout.

Get demonstrations of high priced cars and compare the Mitchell with them.

Call up the Mitchell Agent today and just say



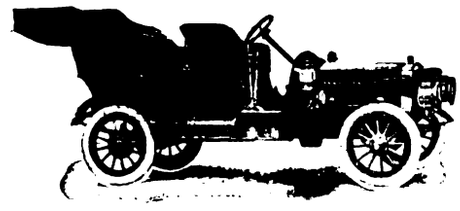
"Show Me"

The Mitchell Touring Car shown below is 35 H. P.—4-cylinder—speed, 50 miles—finish, Mitchell blue—price, $2000.

Write for Catalogue No. 18, describing the other Mitchell models.

Mitchell Motor Car Co., 279 Mitchell Street, Racine, Wis.

Member American Motor Car Mfrs. Ass'n.



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as applied to the

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is more than a mere phrase, it is a title earned through correct design and careful construction and proven by years of hard, constant service wherever power-driven vehicles are known.

The practical qualities that established the Rambler reputation are,—

1st—APPLIED POWER. By this we mean actual tractive force as applied to the road wheels. Owing to the straight line drive of the four-cylinder models and the direct chain drive in the two-cylinder cars, Ramblers have greater propelling force per pound than any other car on the market.

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3d—PRACTICAL ROAD VALUE. With the vast facilities of an enormous plant like the Rambler factory, skillfully directed to the production of two models only, greater value per dollar can be offered than is possible in a plant of lesser output.

In short, the Rambler is a car of

Power, Service and Value

Ordinary business policy dictates a careful examination of its many high qualities before ordering your new car.

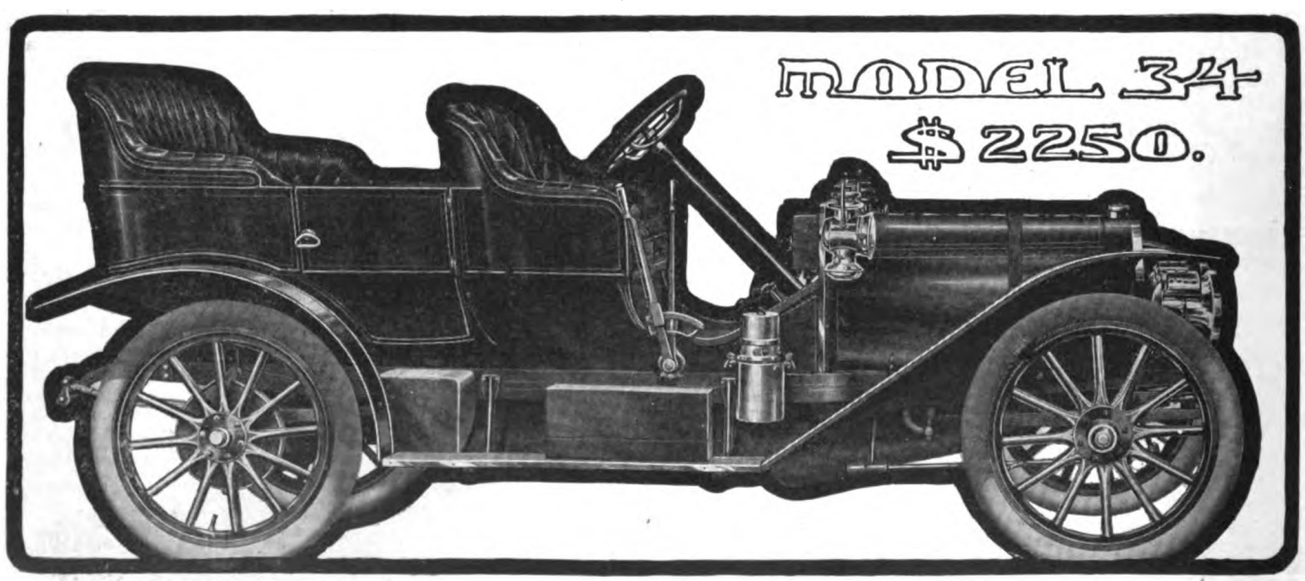
Our 1908 catalog fully describing two touring cars and a high-powered roadster is at your service: write to-day.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, February 13, 1908. No. 20

SEARCHMONT CAN'T SHARE SURPLUS

Supreme Court Upholds Cancellation of Its Selden License—End of an Unusual and Persistent Suit.

The trustees of the bankrupt Searchmont Automobile Co., of Philadelphia, have lost the third and final round of their fight for a share of the Association of Licensed Automobile Manufacturers' surplus and to force the restoration and permit the sale of the Searchmont's cancelled license.

The decision of the Searchmont appeal to the New York Supreme Court was handed down this week by the Appellate division. It affirms the ruling of Judge O'Gorman in the lower court, the decision of the five judges comprising the division substantially being: "No cause of action established; complaint dismissed with costs."

In Justice O'Gorman's decree he cited clearly his opinion as to the rights and liabilities of members of an unincorporated association and the association itself. In part he said:

"The rights and liabilities, however, are always controlled by the articles of association, which constitute a contract, the terms and provisions of which are binding on all its members, and the courts cannot redress any act of an association in the expulsion or punishment of a member or the forfeiture of his membership when such action has been taken in accordance with the express conditions of association articles."

The Searchmont Automobile Co., then a member of the A. L. A. M., went into bankruptcy in 1904, and as it had failed to pay royalty due on its product, its license was promptly cancelled. Some time afterward, the trustees brought suit in the Pennsylvana courts against the association, but the case was dismissed for lack of jurisdiction. It was then renewed in New York in the Supreme Court, and was decided adversely to the Searchmont interests. They then carried it to the appellate division, which, as stated, just has sustained the lower tribunal.

It is the only instance in which the Selden license, as such, and the "working agreement" of the licensing association have been put to the legal test and as such the decision is of no small interest. Interest in the case was further heightened by the general understanding that while the Searchmont trustees were but nominal complainants, the man behind the scenes was really the attorney for the Ford Motor Co., who sought to lay bare the books and accounts and other figures of the members of the A. L. A. M.

Receivers Begin Suit Against Grout.

Following the recent examination of Karl Grout, at which some evidence was taken bearing on a charge of conversion of assets, the receivers of the Grout Bros. Automobile Co., Orange, Mass., have instituted suit against Charles B. Grout, formerly senior member of the concern. The action is to recover $10,000 for the alleged conversion of two automobiles, $2,500 in cash and sundry machine parts. Meanwhile it is stated that Rossell Drisko, former manager of the Bay State Automobile Co., Boston, has been engaged to take charge and operate the Grout plant.

To Build Cars in California.

The Stanford Automobile and Mfg. Co., has been formed in Palo Alto, Cal., to manufacture a two-cylinder touring car. It is capitalized at $75,000, and work his been commenced with ten men in the Stanford Automobile Co.'s garage at 511 Alma street. H. W. Hooper, J. E. Sloan, Frank Sloan and F. S. Hitchins are the men interested in the venture, Hooper and Hutchins being the owners of the patent which will be operated.

Fields Advanced to Vice-Presidency.

Harry E. Fields, sales manager of the Hartford Rubber Works Co., has been elected vice-president of the company. He will make New York City his headquarters.

BRISCOE AGAIN HEADS A. M. C. M. A.

All Other Officials Also Are Re-elected at Annual Meeting—Show Situation is Discussed at Length.

At the annual meeting of the American Motor Car Manufacturers' Association, which occurred in Detroit on Friday and Saturday last, 7th and 8th inst., the incumbent members of the committee of management all were elected their own successors, as follows:

Benjamin Briscoe, chairman; R. E. Olds, vice-chairman; H. O. Smith, treasurer; Wm. Mitchell Lewis, secretary, and W. H. Van Dervoort, auditor.

Three new members of the committee of management were elected for three year terms. They were C. G. Stoddard, Dayton Motor Car Co.; Barney Everitt, Wayne Automobile Co., and Wm. Mitchell Lewis, Mitchell Motor Car Co. The other members of the committee are: Charles Lewis, Jackson Automobile Co.; W. C. Marmon, Nordyke & Marmon Co., and Alfred Reeves, General Manager.

The annual reports proved that the past year had been an auspicious one. The treasury was never so full. As evidence, $5,000 was voted for the work of the Good Roads committee and a rebate of 25 per cent. will be paid to all members who exhibited at the October show in Grand Central Palace, New York.

The reports indicated that there had been a slight falling off in the sale of cars in the big cities during the last three months of 1907, but that as an offset there had been an increase in the sale of cars in cities of less than 50,000 inhabitants.

The subject of future shows afforded prolonged discussion. The whole matter finally was referred "with certain recommendations" to the show committee. The nature of the recommendations was not disclosed, but it is known that the association favors continued co-operation with the Automobile

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Club of America, but on a somewhat altered basis. If the club should not care to again undertake the promotion or management of the "independent" show in New York, the A. M. C. M. A. itself will assume the task. The subject, however, has not been discussed by the club, nor have the manufacturers named their new show committee which will enter into conference with the clubmen at the proper time. At the Detroit meeting, there was considerable difference as to whether December or January is the best show month. No one, however, is anxious for another October exhibit.

The A. M. C. M. A. voted to co-operate also with the A. A. A. in the matter of tours and races, a special committee for the purpose being appointed for the purpose, viz.: H. O. Smith, chairman, Premier Motor Manufacturing Co.; A. C. Newby, National Motor Vehicle Co.; W. C. Marmon, Nordyke & Marmon Co.

Storage Battery to Cut Capital.

At the annual meeting of the Electric Storage Battery Co., of Philadelphia, owners one-third of the capital stock of the Electric Vehicle Co., which will be held March 18, it seems certain that the stockholders will then vote to reduce the par value of the company's stock from $100 to $50 per share. President Lloyd says that this measure has been suggested by several of the largest stockholders, among whom are Thomas Dolan, Rudolph Ellis, Herbert Lloyd, George D. Widener, P. A. B. Widener, Authony N. Brady, Harry Payne Whitney, H. H. Vreeland, and Grant B. Schley.

According to the last annual report, the company's outstanding stock consists of $17,785,800 common and $214,200 preferred. But since the issuance of the report all of the preferred stock, with the exception of a few hundred unassenting shares, has been called in. The preferred is entitled to dividends of 1 per cent. per annum, cumulative, but both classes of stock have received 5 per cent. yearly since January, 1901.

The stockholders who suggest the reduction in the amount of stock outstanding consider that it is too large for the company's assets. In the last report these were stated at $22,225,209. The largest item was "Patents, agreements and franchises, $13,661,626."

The common stock of the Electric Storage Battery Co. is considered active in Philadelphia, where it is traded in. There it has declined from 75 to 28½.

Mabley Leaves the Salon.

C. R. Mabley has resigned the management of the Importers Automobile Salon. He has been succeeded by his former chief assist. W. R. Lee. The Importers offices will be maintained in the Bryant Park Building, New York, but hereafter they will be shared by the New York Automobile Trade Association—the local retailers' organization—an arrangement to that end having been consummated.

The Week's Incorporations.

Somerville, Mass.—Davis Square Auto Co., under Massachusetts laws, capital not stated. Manager, Winsor L. Snow.

Philadelphia, Pa.—American Automobile Equipment Co., under Delaware laws, with $100,000 capital. Corporators not stated.

Racine, Wis.—Miller Motor Co., under Wisconsin laws, with $25,000 capital; to deal in automobiles. Corporators not stated.

East Orange, N. J.—Motor Car Supply Co., of New Jersey, under New Jersey laws, with $25,000 capital. Corporators—Charles D. Geyer, Frank C. Ferguson and Frank E. Ruggles.

Columbus, Ohio—Field-Snyder Automobile Co., The, under Ohio laws, with $10,000 capital. Corporators—John Field, George Snyder, G. E. Snyder, and S. J. Field, all of Columbus.

Evansville, Ind.—Lannert Mfg. Co., under Indiana laws, with $25,000 capital; to deal in carriages and automobiles. Corporators—Henry N. Lannert, Margaret Lannert and Louisa N. Lannert.

Morris, Ill.—Morris Automobile Garage Co., under Illinois laws, with $2,000 capital, to do general garage business. Corporators—Landy Hoge, J. B. Moss, Joseph Pattison, O. T. Wilson and M. B. Wilson.

New York City, N. Y.—Ennis Rubber Mfg. Co., under New York laws, with $50,000 capital; to manufacture rubber tires, etc. Corporators—F. J. Ennis, Brooklyn; J. M. Beasy, C. N. Foster, New York City.

New York City, N. Y.—Wayne Motor Car Co., under New York laws, with $10,000 capital; to deal in automobiles. Corporators—Frank A. Sanford, Roselle, N. J.; Andrew C. Knoller, 141 Broadway; Julian B. Beatty, 529 West 111th street, New York City.

New York City, N. Y.—Universal Auto & Motor Boat Supply Co., under New York laws, with $10,000 capital. Corporators—Brutus von Schwanenfluegal, 134 East Seventy-second street; William H. Orth, 181 Prince street; John J. Kennedy, 38 East Twenty-second street, New York City.

In the Retail World.

Roy Quimby and D. D. Cummings have "opened" in Mankato, Minn. The Ford will be carried.

W. M. Ball and C. A. Stotler have opened a garage in Devil's Lake, N. D. The Cadillac, Franklin and Buick will be handled.

C. H. Bond has purchased the big Copley Square Garage, at 25-31 Irvington street, Boston, H. M. Gulesian being the grantor. The sale price is not stated, but the property is valued at $350,000.

Charles T. Jeffery, eldest son of the Kenosha manufacturer, has, in addition to his duties at the factory, assumed the presidency of the Rambler Garage Co., located at Sheridan road and Wilton avenue, Chicago. His brother, Harold W. Jeffery, is vice-president, and L. A. Richman secretary and treasurer.

Charles E. Miller's Cleveland branch has been removed from 406 Erie street to 1829 Euclid avenue. The new location brings the branch into the center of the city's automobile district.

Omaha (Neb.) dealers have organized the Automobile Show Association, to promote a show during the week beginning March 15th. J. J. Deright was elected president, and C. G. Powell, secretary-treasurer.

The two-story brick building at 235 West Sixty-ninth street, New York City, occupied by Harry Lauderbach as an automobile school and garage was damaged by fire Monday, 10th inst. Four cars were destroyed, the loss totalling $13,000.

Its "carnival week" proved so successful last year that the Indianapolis dealers have decided to repeat it during the week of March 16th to 21st next. As was the case last year the carnival will start with a decorated parade, and each salesroom along the row will be decorated for the occasion. As an added attraction a hill-climbing contest is on the tapis.

New Jersey Lops Off Dead Limbs.

The list of "dead ones," as those corporations in New Jersey who have not paid the taxes assessed them for two years are termed, was published this week. Many hundred corporations are, according to the State act, without legal right to do business, and their charters have been repealed. Among the long list of names are the following: American Rotary Engine Co., American Trimoter Co., Burlington Mobile & Transportation Co., Holyoke Automobile Co., Insular Auto Co., Kensington Automobile Co., National Automobile Co., Newark Motor Vehicle Co., Newark Pneumatic Puncture Proof Tire Co., Orange Automobile Co., Plainfield Auto Garage, Royal Automobile Co., Thermobile Co. of America, Thornycroft Motor Wagon Co. of America, Tuck Petroleum Motor Co., and the Upton Motor Co.

George N. Pierce Drops Business Cares.

George N. Pierce formally has retired from the Buffalo company which so long has borne his name. Practically, Mr. Pierce had not been active in the affairs of the George N. Pierce Co. for a year or so and has been planning gradually to relinquish business cares and to placidly enjoy the remainder of his days. He has made the first move in that direction by going South where he will spend the winter. His resignation as president brought about the election of the following officers, all of whom have been connected with the Pierce interests for many years: President, G. K. Birge; vice-president, Henry May; treasurer, Charles Clifton; secretary, L. H. Gardner. With W. H. Hoyt they constitute the board of directors.

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WOMEN MIX THE SHOW SITUATION

They "Butt in" at San Francisco—Their Projected Exhibition Creates Discord Among the Dealers.

San Francisco is to have an automobile show after all, despite the vote of the Automobile Dealers' Association of California against such a project. It will be held in the Coliseum, March 2 to 8 inclusive, under the auspices of the California Woman's Automobile Club, and this fact has brought about a split in the trade association.

Ever since they, by a small majority vote, decided to abandon their annual show, there has been considerable friction among San Francisco's dealers. The minority, who wanted to hold a show, got after the women motorists and persuaded them to hold a show in March, the entire profits to go to the California Woman's Automobile Club.

The effect of the announcement was instantaneous. The dealers who had voted against a show, believing the present year not propitious for such an exhibition, circulated a petition among the dealers, to make them agree not to exhibit at the show promoted by the fair sex. Those who signed the agreement are said to be: C. S. Howard, Howard Automobile Co.; J. W. Leavitt, J. W. Leavitt & Co.; A. H. Hunter, Osen-Hunter Automobile Co.; Cuyler Lee, the Packard agent; J. H. Eagai, Studebaker Bros Co.; E. P. Brinegar, Pioneer Automobile Co.; G. A. Boyer, Boyer Automobile Co.; L. H. Bill, Thomas B. Jeffery & Co.; Max L. Rosenfeld, Auto Livery Co.; W. F. Culbertson, Mobile Carriage Co.; W. L. Huggson, Standard Motor Car Co.; Frank O. Renstrom, F. O. Renstrom Co.; Frank G. Miner, for the Locomobile Agency; the San Francisco Pope Auto Agency, and the White Co.

J. W. Leavitt, who circulated the petition, said that those who had signed it believed that the proper body to handle such exhibitions would be the dealers' association, and inasmuch as that body had decided not to hold the show, he could not see any necessity for such an exhibition.

It is safe to say that the California Woman's Automobile Club will not get a sanction from the Automobile Dealers' Association of California, the body which is supposed to grant sanctions for such affairs, and it is freely hinted that those dealers who exhibit in the women's show without sanction will probably be expelled. Despite this hatchet over their heads a number of dealers have decided to show at the Coliseum in March and the feminine club's show committee, composed of President Mrs. Fred J. Linz, Mrs. Abbie E. Krebs, and Mrs. Robert Christie, are going ahead with preparations. The women have announced a partial list of dealers who have promised to exhibit at the show, one of the peculiar features being that the Locomobile Agency, which is said to be against the show, according to Leavitt's petition, is also represented on the women's side. The other exhibitors, as announced, are: Keystone Automobile Co., City Hall Auto Co., Dragon Automobile Co., I. Freeman, Carmichael-Bray Automobile Co.; A. J. Hayes, Frayer-Miller agent; Rambler Automobile Agency, Maxwell-Briscoe Pacific Co., N. R. Cooper, Premier; Renault Freres Co., Pacific Motor Car Co., Winton Motor Carriage Co., and the Corbin Agency.

The Automobile Dealers' Association of California will hold a meeting shortly at which it is expected there will be unusual activity and "doings."

Pope Dividend is in Prospect.

Receivers Pope and Yule of the Pope Mfg. Co., Hartford, have closed a deal with a Chicago broker for the sale of the former Imperial bicycle plant in Chicago, for $100,000, a substantial part of which already has been paid. Options also have been given on other idle plants belonging to the Pope Mfg. Co., all of which its is expected will be taken up in the near future.

The affairs of the company are in a most prosperous condition. The Hartford plant is working full time and has had an average pay roll of more than $12,000 per week for the past four months; orders for Pope-Hartford cars are all that can be desired and prompt shipments are being made. Both of the Pope bicycle factories also are in full blast and are fuller of orders than at this time last year, the bicycle business, remarkable to say, having scarcely felt the effects of the financial depression.

The receivers have taken advantage of cash receivers have taken advantage of cash discounts on all merchandise contracted for, and last week every account due was paid. They are hoping that by April 1st a substantial dividend will be declared.

Almost an "International Case."

In the common pleas court at Hartford, Conn., on Tuesday last, 11th inst., there was heard the case of Thomas W. Fahy, of Hartford, against A. Clement, the Paris automobile manufacturer, for $872, balance due and interest. Fahy testified that about July 20, 1902, he entered the employ of Clement, who at that time was manufacturing small motors for bicycles and automobiles at a factory in Hartford, at a salary of $5 a day. He was engaged by William G. Allen, Clement's general manager and representative in Hartford. Fahy remained as superintendent of the factory till February 20, 1904, at which time the plant was closed and discontinued, a period of 436 working days. His salary amounted to $2.180 and the defendant has paid $1,308, leaving $872 due. During the management of Allen, Fahy had frequently asked that the balance of $2 a day be paid him and he had also asked M. Roquet, Mr. Clement's nephew, who succeeded Mr. Allen.

$100,000,000 MARK IS PASSED

Census of the Automobile Industry Shows Volume of Business for 1907—Story Told in Big Figures.

While many presentments of more or less elasticity have been printed, designed to show the volume and importance of the automobile industry, what undoubtedly is the most careful compilation of figures and what fairly may be accepted as a census of the automobile industry just has been completed by the Association of Licensed Automobile Manufacturers. Their records are such that they know to the last car what is the output of their members, and by intelligent and diligent inquiry they have been able to arrive at a fair estimate of the extent of business transacted by the others in the trade.

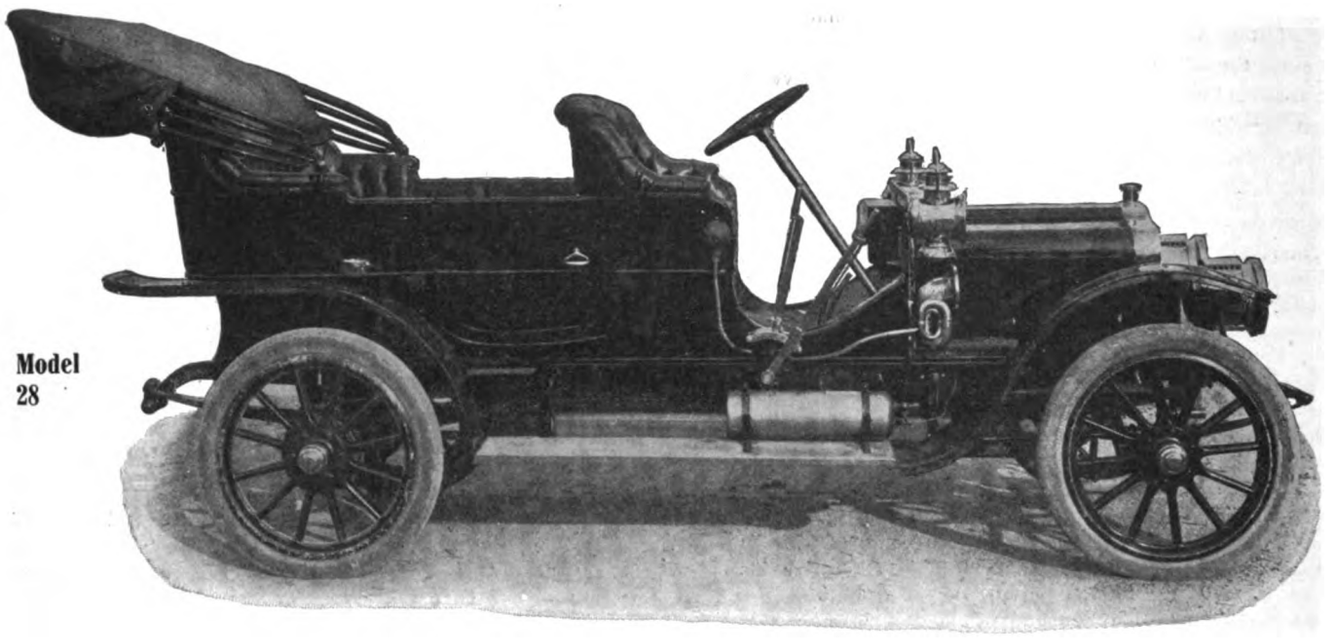
As a result of this research the statement is made that the value of the product sold during the year of 1907 was $105,669,572, the capital employed was $171,448,769, and the number of employes engaged 108,500. The number of pleasure gasolene cars manufactured in this country is placed at 47,302, of an aggregate value of $96,169,572. There also were produced 5,000 steam and electric pleasure vehicles, of a total value of $7,500,000, thus giving a total of 52,302 pleasure automobiles sold in the past twelve months with a total value of $105,669,572.

The percentage of increase each year has been consistent, as shown from statistics gathered in 1904, which show the value of the total output $26,645,064 as against $105,669.572 for the year 1907. Based upon accurate knowledge of the number of employes and the production of a large number of automobile factories, it is estimated that the total number of employes directly employed in the factories is 58,000. and the capital employed $94,200,000. As in many other manufacturing products, there is an indirect investment which is closely allied to vehicle manufacture. This includes such products as tires, rims, lamps, speedometers, drop forgings, etc. Close estimation shows that there are 29,000 employed in this indirect manufacture with total capital employed of $36,700,000. Unlike many other manufactured products the sales end of the automobile industry is exceedingly expensive. At the close of the year 1907 there were 2,151 sales and garage establishments employing 21,500 people, with a capital of $57,500,000 invested to do this business. This includes real estate, rentals, insurance bonds and interest on money invested.

By adding the Selden $2,000 light touring car to their account, the Palmer & Singer Mfg. Co., New York, have completed the readjustment of their lines. They thus will offer the choice of Seldens, P & S's, and the imported I. F.

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THE SELDEN CAR



Model 28

Five Passenger Touring Car $2000
Three Passenger Runabout $2000

An Attractive Car at an Attractive Price

SPECIFICATIONS

Engine—4 cylinders, 4¼ x 4½, 28-30 brake horsepower.
Transmission—3 speeds forward and reverse, selective, Timken bearings.
Wheel base—109 inches; tread, standard; clutch, cone leather.
Body—sheet metal, straight line type, roomy and comfortable.
Tires—32x3½, quick detachable; make optional.
Frame—pressed steel, 4¾ inches deep.
Front axle—single I-beam drop forging, ball bearings.
Rear axle—bevel gear drive, enclosed type, roller bearings.
Ignition—synchronized jump spark.
Weight—empty, 2,200 lbs. (actual, not catalog).

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THE PALMER & SINGER MANUFACTURING COMPANY, 1620 BROADWAY

SELDEN MOTOR VEHICLE COMPANY
ROCHESTER, N. Y.

Members A. L. A. M.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, FEBRUARY 13, 1908

About "Jersey Justice."

It is fetching matters pretty far when the unfriendly critics of the organization assert that the plainly spoken address of President Hotchkiss of the American Automobile Association at the Newark banquet had anything to do with the "shakedown" introduced by Senator Frelinghuysen a few days later in the New Jersey Senate. In his inaugural speech, Governor Fort had recommended such a course and it was well known that a bill embodying his views was in preparation. Mr. Hotchkiss's words neither quickened nor retarded the action of Senator Frelinghuysen. He already was cocked and primed for another assault on the automobilists' pocket books. They always have proved such "easy picking," that any "robber State" need have small cause for timidity.

Plain speech was sadly needed in New Jersey and it served best just when and where and in the fashion that it was delivered by Mr. Hotchkiss—directly to the elected promoters and advocates of that form of extortion. The mock heroics and mock regrets of New Jerseymen, who, like Frelinghuysen himself, earn in New York the daily livelihoods which they spend in New Jersey, is as amusing as it is inconsistent. The fact that the Hotchkiss address stung Governor Fort to retort is a hopeful sign. The Governor's excuse for the extortion is the first official explanation that ever has been vouchsafed.

What if the road between New York and Philadelphia does lie in New Jersey? The road between New York and Buffalo lies in New York, as does the road to Coney Island, and it is a safe assertion that the latter, at least, is used far oftener by New Jerseymen than the road to Philadelphia is used by New Yorkers.

What if New York motorists do make frequent use of the roads to the New Jersey seaside resorts? Do they not pay expensive "toll" to the New Jersey roadhouses, hotels and garages every time they visit one of the resorts? And would not the revenues of the latter shrink sadly if it were not for the patronage of the New Yorkers and Pennsylvanians? If New Jersey maintains good roads to the resorts, is it any more than the State owes to its citizens who wax fat at the expense of "outlanders"? The citizens pay taxes that they may thus wax fat. Why should the State discourage patronage by also levying on the visitor? Why should he be "plucked" coming and going and when standing still? Why should extortion be practised on one class of citizens for the upkeep of the roads? Long before it became so apparent that automobilists were "soft marks," there were holes and loose stones and well worn ruts in New Jersey's macadam roads. Why was there then no outcry and no keen itching for "shaking down" the farmers and other drivers whose horse-drawn vehicles caused the ruts and holes?

In his address, Mr. Hotchkiss described the situation not only graphically but fairly. When he denounced the New Jersey law as "against principle, courtesy and self-interest," he told the truth plainly and in a very few words. It is a hold-up, practiced in legal guise, instead of with a mask and a shotgun. If such extortion as New Jersey practises is legal, two thoughts cannot but arise in the minds of men not versed in the statutes: First, What is the meaning of "public roads," of "freedom of travel' and of "equal and exact justice?" and, second, Is ours truly a union of States? If it is such a union, how is it possible for one State to exact an admission fee and require passports—for that is what the certificates amount to—from the residents of other States or to make the legitimate means of travel employed by one class the measure by which freedom of movement is to be judged?

Possibilities of the Worm Drive.

It is rather to be wondered at that no more attention is being paid by designers to the possibilities offered by the worm drive for final transmission of power in the shaft driven car. Especially in the case of the commercial vehicle, where slow running speeds demand a high driving ratio, and where smoothness of action and the elimination of as many working parts as possible is so much to be desired, the worm drive is particularly desirable.

It is true that the efficiency of the worm gear is usually considered low as compared with that of the spur and bevel types, but improvements in generating its faces, as well as the possibility of employing it to the best advantage in this connection, make it possible to employ it in such a way as to involve little more loss, if any at all, than occurs with the usual form of transmission. Briefly, with the use of the worm, it is possible to employ a "direct drive" to a more nearly universal extent than otherwise, thereby replacing two pairs of spur and one pair of bevel pinions with a single worm. The same improvements in design mentioned, have also done away to a great extent with the former tendency of the worm drive to "lock" when reversed, thus preventing the worm driven car from coasting freely.

It is one of the characteristics of the worm gear that the greater the speed ratio of its members and the more rapidly the driver is permitted to turn, the greater its efficiency. Furthermore, the worm drive is at all times the silent drive. This is not the case with gears of the spur type, as is testified by the use of rawhide and herringbone gears for the transmission of electric vehicles. The worm gear is subject to wear to perhaps a greater extent than the spur, even in its highest development, because its action partakes less of rolling and more of sliding motion than is the case with the other form. At the same time, the elimination of rattle and shock from the gear

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teeth, and the uniformity of the drive obtainable, are points greatly in its favor.

At the present time there are two or three American commercial cars which are equipped with this form of transmission, and perhaps as many abroad, of which a notable example is the "mixed" omnibus system described in another column, in which the principle is applied in a particularly happy manner, it would appear. At all events, sufficient trial has been given the mechanism in its best form to prove it worthy of close scrutiny by the designer. Its possibilities are very promising, and it would hardly appear wise to overlook it wherever conditions warrant the adaptation of the high-speed motor to the slow-moving car.

Concerning the Front Drive.

Front actuation and front control of the motor vehicle is a proposition which unquestionably has been given too little consideration by motor car designers hitherto. For the pleasure vehicle it is true that results are obtained with the usual rear actuated and front controlled arrangement, which justify its continuance. But for the commercial vehicle, with the imperative necessity which is carries of making every foot-pound of energy developed at the motor produce as nearly as may be one foot-pound of work at the drivers, it is required that everything must be sacrificed to efficiency of the plant. Rear driving and front control involves a considerable waste of power whenever it becomes necessary to turn the vehicle from a straight course, furthermore there is every reason to believe that it develops a less perfect mastery of the machine than is possible where the drivers are also made the guiding wheels. Therefore the use of the front driving system, or the vehicle mounted on four driving wheels, seems the logical outcome of the motor traction enigma.

In the broad presentation of this subject which is outlined in another column, the real basis of advocacy of the front drive principle hinges about the turning of the machine from a straight course. If it is true that fully 95 per cent. of the average running of any machine is done in a straight line, as suggested, then it would appear at first that the present arrangement is as good as any which might be contrived, since it is well worked out and well proved in practice. Nevertheless it should be borne in mind that the subject of transmission and traction losses on curves is one which remains in its entirety to be investigated experimentally. Up to this time, all provision for turning has been based largely on theory, and the question of resistances has been for the most part adroitly side-stepped.

At all events, it would appear that for exact construction, either the drive should be applied to the front wheels, or to all four wheels if steering is done from both ends of the vehicle, or else that the control of the differential should be mechanical and governed by the steering gear, rather than left to compensate itself on the balance principle. It is safe to assume that in either event, the tendency to skidding would be largely overcome were such systems to come into vogue.

For the commercial vehicle, it is necessary to take into account all such fine points as these, which custom and its hurried development have elided in the pleasure vehicle. For the lighter types, it is unreasonable to suppose that present traditions are to be lightly overthrown unless it be found possible to combine this comparatively new ideal with existing forms at a minimum of trouble and expense. It is too late to expect radical alterations in automobile construction as the term is commonly understood. The budding development of the commercial car era, as it is sometimes fondly called, however, leaves ample time for the production of vehicles upon lines in close conformity to theory, and in this respect, it is not unlikely that this matter of adapting the driving relation to all possible variations in the course, is destined to receive considerable attention.

It is evident that the American public is not the only one which likes to be humbugged. The widespread interest in the so-called New York-Paris "race" is evidence of the fact. Every other man expects that the competing cars will be towed by horses or other automobiles, or be taken apart and transported in pieces in carts or on dog sleds, and yet they are at least half-willing to accept the venture as a race, whereas, if a pedestrian, or an equestrian, or a cyclist undertook a journey of the sort and resorted to such practices, he promptly would be denounced as a fraud and a faker by the very newspapers that are promoting the New York-Paris "automobile races." As adding to the gaiety of nations and providing material for a book of unusual travel, however, the enterprise is worth something. As a race, it is mere fudge.

It is understood that the New York Automobile Trade Association has abandoned the idea of a day parade, which had been talked of as one of the big features of the April carnival. The decision is a wise one. Of all "weedy," haphazard, uninteresting, unimpressive turnouts, it is unfortunately too true that a parade of motor cars heads the list. If, on the other hand, it is possible to promote a night parade and force the paraders to maintain a slow pace and to keep their distances, illuminations rendered possible by the car's own electrical apparatus may be made to present a novel and beautiful spectacle, that will be worth going miles to see. One impressive feature of the sort will be far more valuable than a series of minor popgun affairs. If the carnival is to be effective, it were well that the butter be not spread too thin.

COMING EVENTS

February 10-15, Detroit, Mich.—Tri-State Automobile and Sporting Goods Association's annual show in Light Guard armory

February 17-22, Cleveland Ohio—Cleveland Automobile Dealers' Association's show in Central armory.

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

February 22, Boston, Mass.—Bay State Automobile Association's 150 miles endurance run to Providence, Worcester and return.

February 24-29, Lincoln, Neb.—Dealers show in the Auditorium.

February 24-29, Portland, Me.—Annual show in the Auditorium.

February 25, Brooklyn, N. Y.—Long Island Automobile Club's 242 miles economy run to Montauk Point and return.

March 2-7, Ormond, Fla.—Annual beach carnival, under ausp ces Automobile Club of America.

March 2-8, San Francisco, Cal.—California Woman's Automobile Club's show in Coliseum.

March 7-14, Boston, Mass—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

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NEW JERSEY'S NEW "SHAKE DOWN"

Fees Ascend Long Sliding Scale in Five Dollar Jumps—Fifty Cents "Admission Tickets" for Non-Residents.

Senator Joseph S. Frelinghuysen, whose automobile law has been in operation in New Jersey for a year, laid the plans for a larger "shake down" of automobilists in the Senate of that State's legislature last Monday night, 10th inst. Frelinghuysen, who is a lawyer and insurance counselor in New York City and a legislator in New Jersey, doubtless will see his name in print many times, as the amendments he introduced are designed to make larger dollars and many more of them drop into the State's coffers.

They consist of a sliding taxation of the vehicles based upon horsepower, from $3 to $100 per year, and a sliding scale for drivers' licenses, from $1 to $25. Senator Frelinghuysen also proposes to abolish manufacturers' licenses; to increase the number of paid inspectors from seven to ten, and the unpaid inspectors to twenty, with not more than two from each county; to change identification marks annually, and have the registrations and licenses expire on June 30th each year; to allow citizens of other States the special privilege of using New Jersey's roads for a limited time upon payment of a nominal fee, and to have all the revenue derived from automobilists apply to the various counties for the improvement of State highways.

These amendments to the State automobile law are not the only things that have kept Mr. Frelinghuysen busy. On the same day he introduced two separate amendments, that really are worthy of passage by the legislature. One is an amendment to the crimes act, making it a misdemeanor to place glass or any other cutting substance on a public highway, and also making it a misdemeanor for failure to return any fine collected under the automobile law, within thirty days. The other bill introduced by Mr. Frelinghuysen provides for a fine of $10 for any vehicle upon a county or other road without a light between sunset and sunrise.

The measure provides that the present number of paid inspectors be increased from seven to ten and to twenty unpaid inspectors, not more than two of the unpaid inspectors being from one county.

The registration fees are raised from the present rates of $3 for cars under 30 horsepower and $5 for those above 30 horsepower, to the following scale:

First class	1 to 10 h.p.	$3.00
Second class	11 to 20 h.p.	5.00
Third class	21 to 25 h.p.	10.00
Fourth class	26 to 35 h.p.	15.00
Fifth class	36 to 50 h.p.	20.00
Sixth class	51 to 70 h.p.	25.00
Seventh class	71 to 90 h.p.	35.00
Eighth class	90 to 100 h.p.	100.00

The drivers' license fees are raised from $1 for those driving cars of $30 horsepower and under, and $2 for those operating cars of more than 30 horsepower to the following scale:

First class	$1.00
Second class	2.00
Third class	3.00
Fourth class	4.00
Fifth class	5.00
Sixth class	10.00
Seventh class	15.00
Eighth class	25.00

Provision is made for a blanket license for licensing cab companies, operating adjacent to ferries, provision being made that they shall operate only one mile within the borders of the State.

It is proposed to abolish the manufacturers' blanket license.

Motorcycles are to be registered at a yearly fee of $2, and carry such identification marks as may be prescribed by the commissioner of motor vehicles.

All registration certificates shall hereafter expire on June 30, each year, and when certificates are issued for the fractional part of the year, only the fractional part of the fees shall be charged.

The provision also for non-residents' registration and license, fixes an admission ticket" good for six days or any multiple of that number of days, not exceeding thirty days, at a price of 50 cents per six days. It is provided that all identification marks both for residents and non-residents will hereafter be supplied by the State and be changed annually.

The receipts for all sources are to be so distributed by the commissioner of public roads that those counties that have improved roads by the county act shall receive their pro rata share with those that have been improved by the State road act.

Anti-Chain Rule to be Tested.

The first fruits of the New York Park Department's order, which prevents automobiles equipped with tire chains from using the park roadways, became apparent last Saturday when a driver of a taxicab was arrested for entering the park with a vehicle, the tires of which were furnished with this type of protection against skidding.

Meanwhile the Weed Chain Tire Grip Co., who are the makers of the bulg of these chains, evidently do not intend that their customers are to suffer if it can be helped. They purpose testing the legality of the new ordinance and publicly announce that they "stand ready to defend any automobilist arrested for an alleged violation of the Park Board ordinance, so long as we deem such defense necessary or advisable to demonstrate the invalidity of the ordinance."

Waco, Texas, is "agin" automobiles. At its last meeting the city council passed an ordinance restricting the speed of motorvehicles to 10 miles an hour in all the residential and business sections of the city.

MAYOR MAY STOP THE GRAFT

—Perhaps

Awakened to Prevalence of Joy Rides in City Vehicles—His Confidence in Official Honesty is Jarred.

It is barely possible that—for a time, at least—the extent of "joy riding" at the taxpayers' expense, and the conversion and misuse and abuse of their property may be curtailed in New York City.

The Motor World's series of articles, "Motor Cars as a Medium for Municipal Graft," aroused Mayor McClellan to a sense of conditions in New York, and as a result he has issued an order that his department officials are not to use the city-owned automobiles for private purposes or regard them as personal conveniences.

Two years ago the Board of Aldermen of New York passed an ordinance to the effect that all city owned automobiles must at all times carry a sign, prominently displayed, showing that the car was a municipal vehicle and indicating to what department it was assigned. Mayor McClellan, however, vetoed the bill, explaining that his officials all were men of honor to whom such a measure was unnecessary, as they did not and would not use city property save for city purposes!

What form of deterrent will be employed is not now known, but it is said that may be a central garage will be established where all city machines will be housed and and their outgoings and incomings recorded. The effect of such a system, however, largely will be dependent on the nature of the man who keeps the records.

It is possible—barely possible—also that the police department will be called upon to detail some of their detectives to watch officials who are suspected of "joy riding." The report of their investigations would make interesting reading, but what would happen to the detective who chanced to report the use of a city car by, say a mayor's closest appointee or by a secretary of a police commissioner is not difficult to surmise.

Oklahoma Fixes Stiff Figures.

Oklahoma is trying its hand at automobile legislation, and already the bill introduced by Representative Cope has passed the Assembly without amendment. The measure sets a maximum limit of 15 miles an hour in rural districts, ten miles in residential sections of towns and cities and an impossible five miles an hour in business portions. The use of automobiles will come high in the new State, too. The Cope bill requires that each car be registered annually at a fee of $10, and in addition the driver must secure license to operate the car, the fee for the latter being $5. No person under 18 years of age will be allowed to drive a car.

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FORT DEFENDS NEW JERSEY LAWS

Advocates "Squeeze 'Em Again" Policy at Automobile Club Banquet—Hotchkiss Provokes Him to a Second Speech.

Diametrically opposite views regarding legislative regulation of motor vehicles on the public highways of New Jersey were presented at the annual dinner of the New Jersey Automobile and Motor Club, Newark, Thursday night last, 6th inst., by Governor J. Franklin Fort and Judge William H. Hotchkiss, president of the American Automobile Association. Although J. B. R. Smith, New Jersey's Commissioner of Motor Vehicles, and Charles Thaddeus Terry, chairman of the legislative committee of the American Automobile Association were among the speakers, Governor Fort and President Hotchkiss were hailed as "the" speakers of the evening. The former spoke twice, rising the second time in defense of the New Jersey statutes which had been "unmercifully" attacked by Judge Hotchkiss.

Governor Fort was introduced as a "just legislator and a friend of the automobilist." He expressed his high regard for motorists generally and the fascination he experienced in the sport they represented. He said he hadn't reached the "state of luxury" necessary to ownership of a car, but that during his recent campaign he covered 2,004 miles in an automobile in twenty days—without breaking the speed laws.

"I am a strong believer in the urgency of establishing a department for motor vehicles for two reasons," continued the governor. "In the first place, if the scheme I hope to put through meets with the approval of the people, a revenue will be derived from this department that will equal any revenue in the State, excepting that from corporations. I don't see any reason why autoists should not contribute at least $200,000, considering the benefit that would redound to them.

The speaker referred to the roads of New York State and told of the method of taxation by which they were made, and kept in repair. He spoke of the proposed method of taxing automobiles in New Jersey. In this particular he said that it mattered not to him whether motor cars were taxed on a basis of their respective horsepower or weight. In any event an increased license fee, such as has been proposed, would be an extra burden to the autoists, but he thought that it would cause no diminution in the ranks of automobile enthusiasts, but, by reason of better roads obtained, would increase the number, giving the automobile trade and automobilists superior advantages.

As to speeding inconsistent with the public safety, the Governor asserted that the law justly fixed the limitation, and he declared that violators of the speed laws should be summarily dealt with, adding that if it was in his power, he would help put any violator to a full experience of the discomfort of law breaking.

"Another thing," the speaker declared, "I think that every tire on the road should be taxed, and I am hopeful of bringing about—perhaps it won't be this year or next—the placing of such a tax upon every vehicle using the public highways. And then, too, no vehicle, automobile or carriage, should be allowed on the road at night without lights. This would be a hardship on no one and would result in greater protection to the driver than the pedestrian."

In something of an apologetic strain, Judge Hotchkiss prefaced his written speech. He did not disagree with Governor Fort in many things, but in automobile regulation he differed with him on many points. He responded to the toast "Jersey Justice," and in the course of his address denounced with no little asperity the present laws regulating drivers of motor vehicles, and especially the treatment accorded visiting motorists by New Jersey.

Judge Hotchkiss got facetious when he asked "What is wrong with Jersey justice, when applied to motor users, particularly those from other States?"

"Your people are not unlike ours," said the speaker. "Many of you pass the days in our metropolis; your streets, your municipal services, your buildings, your general laws are much the same; and to-night, this Lucullian board and this your generous hospitality—why, even New Yorkers could do no better, perhaps, not so well. More, as I stepped from the ferry and walked to the train to-day, I was not halted and asked whether I had registered and been tagged from Trenton, though the officer on guard must have guessed that I would, ere long, help wear out your sidewalks, be guided by the radiance of your street lights and enjoy the protection of your police. And yet, I was not stopped and numbered! Nor has any peace officer yet demanded that I execute a power of attorney to some unknown official over on the Delaware through whom New Jersey could retain jurisdiction of my body and property, in case I might heedlessly violate your laws or accidentally invade the rights of Jersey men. So for me, to-night, it's: Hoch to Jersey justice! For, gentlemen, let it be recorded that, on this day of grace, the sixth of February, nineteen hundred and eight, a New Yorker and a motorist boarded a ferry boat, with deliberate intent to use your streets and sidewalks and purloin from you, for a time, all those public services which make modern life so easy, and that, after using them as freely as the air he breathed, he is here in Newark to-night, unlicensed, untagged, unattorneyed—and still at large. You know the reason. Like tens of thousands more, in setting out for New Jersey, he left his automobile at home.

"And so I again ask: What's the matter with New Jersey in dealing with the motor car? Prejudice has existed in New York, rustic Dobbins still sometimes shy at the newfangled wagons, drastic ordinances have been passed, and weird laws enacted, and at times enforced. Yet, for nearly four years our motor vehicle law has proved so acceptable as not to require amendment—framed by motorists it was passed unanimously by a legislature dominated by the farmer vote—strangers are free to use our roads, without registration or tax; motor vehicle licenses, with us, are unheard of; accidents, save in congested territories, relatively rare; speed traps, except on the borders of the Greater City, all but unknown."

The speaker showed the difference in New Jersey, where the miles-per-hour speed clause is enforced literally, and told of a friend who made seven contributions one day last summer, and who vows henceforth to keep his purse out of New Jersey. Judge Hotchkiss seemed to think that the answer to the question "What is wrong with Jersey justice" is that there has been lack of cooperation between motorists, which has hindered the passage of laws that would be satisfactory to all users of the roads. Other reasons, he pointed out, were that the prejudice of the horse owner has not, as elsewhere, materially decreased, while the desire for revenue from "outlanders" seems to have become a settled fact in the State policy.

Judge Hotchkiss advocated a rational speed rule, by which speed would not be determined by a miles-per-hour clause, but by whether the operator in his driving endangered the life and limb or property of the public. He also asked who owned the roads, anyway, and answered the question by asserting that they belong to the State and as such should be maintained by the State and not by any particular class of individuals. "In advancing civilization the roads should be made to fit the traffic and not the traffic to fit the roads." The speaker closed his address by declaring that the present New Jersey law is "against principle, courtesy and self-interest."

In replying, Governor Fort said he didn't want the impression to be gained that he was in sympathy with the speaker's views. The Governor declared that if in disputes arising from violations of the speed laws the issue were left to a jury the accused "would have no show," while the fixing of a speed limit, he declared, resulted in fewer convictions for over-speeding than if left discretionary. As to the taxing of outsiders the Governor said that New Jersey was peculiarly situated, affording direct highway between New York and Philadelphia, while its coast resorts attracted touring parties from both States in greater numbers, with the result that Jersey roads were used almost as much by non-residents as by those who lived within its borders. They should contribute accordingly toward maintenance of the roads, he added.

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ONE MORE BROADWAY PALACE

Palmer & Singer's New Building and Its Equipment—Special Provisions to Prevent and Fight Fire.

With the opening of the Palmer & Singer building at 1620 Broadway, another impressive structure has been added to the "automobile palaces" that mark that famous New York thoroughfare.

This Palmer & Singer establishment is five stories and basement, constructed of reinforced concrete. It occupies the entire plot running through to Seventh avenue, thus affording a frontage on both streets.

In designing the building, the architects had in view not merely the convenience of its occupants and the expeditious handling of its contents, but the safety of both. Unusual provisions have been made to render the structure proof against fire or to closely confine any fire that might occur.

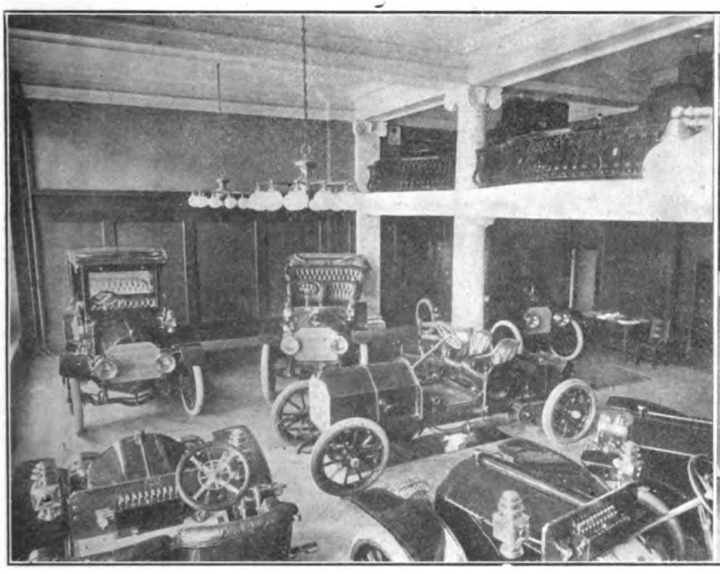
Throughout the entire building an elaborate system of standpipes with hose connections have been installed, the force for the water being obtained from powerful pumps in one of the cellar vaults. These pumps supply also tank of large capacity on the roof so that in case of a fire the water supply and the force behind it will be adequate for any necessity.

The elevators are many and commodious. No extreme care will be necessary to place a car in an exact position on them, as a generous allowance has been made, sufficient for any limousine or large touring car. In front of each elevator is a turntable so that cars may be easily handled without the extensive manipulation required where this important apparatus has not been installed.

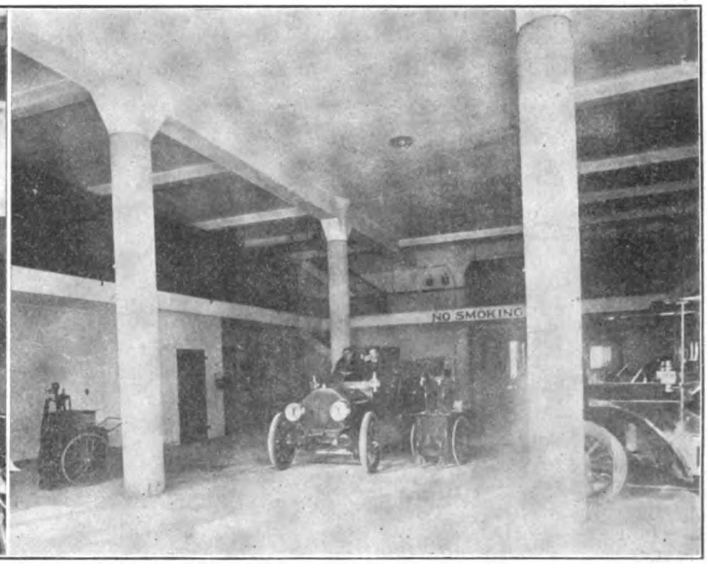
The cellar comprises several vaults, each separate and walled off from the others. One contains the gasolene vaults, another the boiler room and power plant for elevators, etc., while a third compartment contains water pumps for the high pressure fire supply and roof tanks. In the cellar also are three pits over which cars may be run for simple repair work which can be done without resource to the shops above. The turntable and wash stands are also here close at hand to the immense elevators.

The main floor contains the salesroom where the 50 horsepower Simplex is to be shown together with the three cars of the Palmer & Singer line, the P. & S. four-forty, six-sixty, and a town car, also the Selden light touring car. The sales force will have their desks in this room behind which will be the garage with its entrance on Seventh avenue. Facilities are also provided for washing cars in the garage.

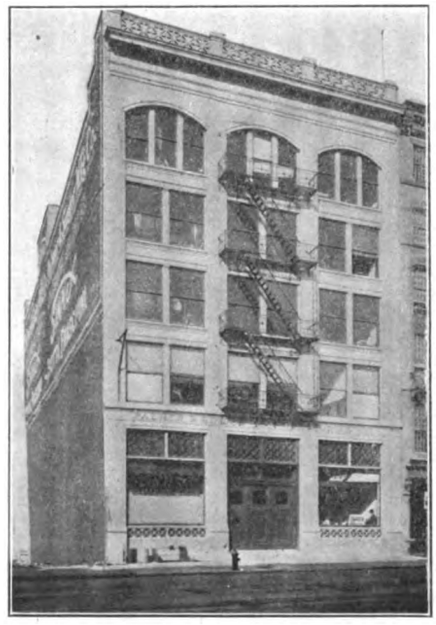
The mezzanine floor is arranged for the accommodation of the auditor, cashier and bookkeeper. The Seventh avenue end contains 150 lockers for chauffeurs and a platform for the use of the checkers who will note the incoming and outgoing of cars and record the movements on a time clock. On the floor above, the Broadway end is occupied by the executive offices. Back of these is more garage space, easily accessible by elevators. The Seventh avenue end is equipped for the comfort of the chauffeurs, with lounging and music rooms, pool tables, shower baths, a barber shop, card room and a bar serving "soft" drinks.



MAIN SALES ROOM



MAIN FLOOR, SEVENTH AVENUE SIDE



PALMER & SINGER BUILDING

The balance of the floor is reserved for the machine shop, where twenty cars may be repaired at the same time. The equipment is very complete, comprising lathes, speed drills, drill presses, milling machines, planers, grinders, buffers, etc., a forge and portable crane, the latter for use in removing engines, transmission and other heavy pieces. The shop contains four pits, and was designed that the greatest amount of light should be obtained. Twelve skylights covering almost the entire roof, materially assist this purpose. There are work benches and accommodations for the many men necessary to the rapid facilitating of the work.

The third floor is devoted entirely to storage, with a capacity of over 60 cars. This room, like all the others of its kind, is supplied with turntables and wash stands, and as it is intended that practically all the washing of cars is to be done here, the other garage floors must of necessity be dry. The fourth floor is also to be used exclusively for storage and covering, as it does, an area equal to the whole ground site, it affords in connection with the other space devoted to the same purpose, an area sufficient for the storage of an immense number of cars.

Prominent among the features of the fifth floor is a commodious drafting room

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with every facility for the experimental work on new ideas that may be incorporated in the Palmer & Singer product. Adjacent to the draughtsmen's quarters is the stock room, where a complete line of parts will be constantly on hand to expedite the general repair work. There will also be on this floor a large and well equipped tool room.

Why Wooden Conduits are Unreliable.

While it is not commonly the custom for the secondary wires to be contained in wooden boxes or troughs placed above the cylinders there are persons who still adhere to this form of conduit which was once general. Though wood in itself is a non-conductor when dry, when wet it furnishes an outlet for the high tension current that is responsible for short circuits with the accompanying misfiring that often prove a serious annoyance to drivers and cannot be readily discovered. Far better than the wood box is the fibre tube into which the four secondaries may be put or the smaller tube to contain only one wire, each of the leads having its own conduit, the fibre will not absorb moisture.

Care to be Exercised Before Cranking.

While it seems almost unnecessary to suggest to any one competent to drive a car that care should be taken to have the emergency brake set and the speed lever in a neutral position before cranking the engine, yet the frequent accounts of accidents caused by negligence in these matters are an evidence that many drivers fail to realize the importance of a simple precaution for their own safety. The habit of always looking at the control levers before starting is one easily acquired and when one realizes that small boys have a tendency to play with everything within their reach, the necessity of making sure of the position of the spark, throttle and speed controls is of prime importance.

DETROIT SEES ITS SECOND SHOW

Tri-State Association's Seventh Annual Exhibition Opened Brilliantly—Some New Comers Among Exhibitors.

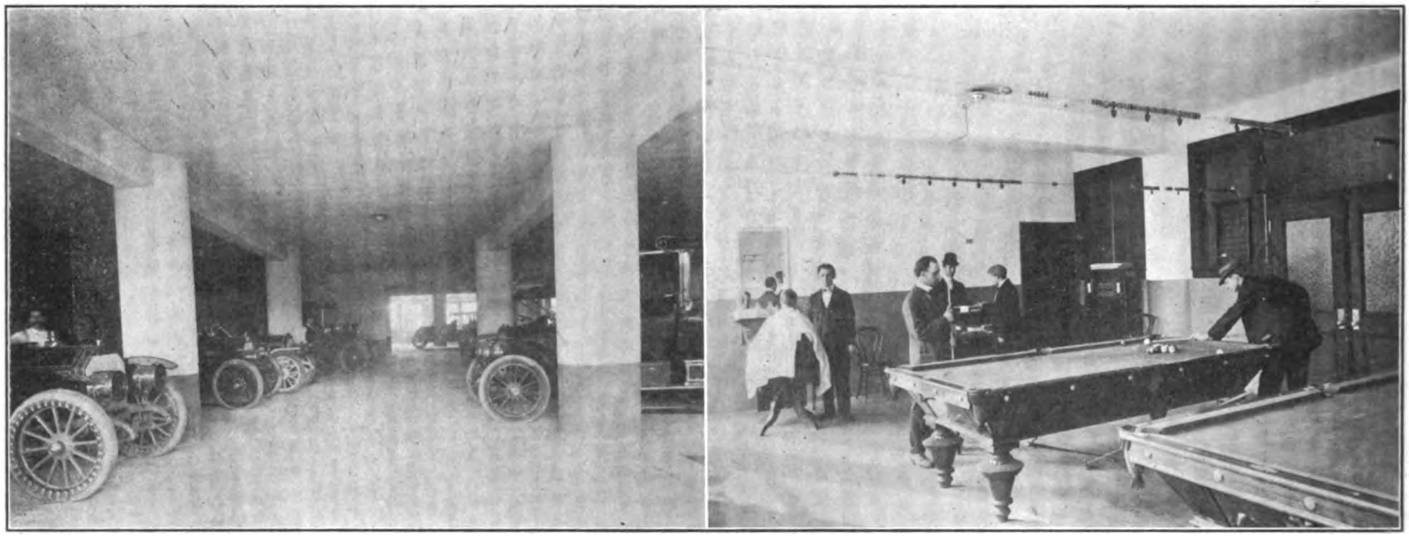
Detroit this week is enjoying an automobile show—the second to be held there this season. The first was promoted by the Detroit Automobile Dealers' Association, and while the competition is felt, the present exhibition—the seventh annual of the Tri-State Association—makes a brave showing.

Although many well known cars were missing at the opening last Monday night, 10th inst., at the Light Guard armory, for the reason that they had staged at the previous show, several representative makes are much in evidence, among them being the Cadillac, Northern, Aerocar, Brush, Packard, Elmore, Pope-Waverly, Wayne, Oakland, and Reliance. Two new cars also make their appearance. The International Harvester Co.'s high wheeled buggy, although first exhibited at the State fair some months ago, was shown for the first time at an automobile show. The Regal, the newest Detroit product, also was displayed in both runabouts and touring models.

The show opened on Monday night with welcoming addresses by Governor Warner and Mayor Thompson in behalf of the State and city, respectively. The decorations are in maroon and white, and as the booths are uniform, harmony is maintained. The main floor has been given over to the car exhibitors, the gallery containing all the accessories exhibits. Motorcycles have the entire drill hall to themselves. The exhibitors showing cars are:

Cadillac Motor Car Co., Cadillac; Northern Motor Car Co., Northern; Aerocar Motor Co., Aerocar; Welch Motor Car Co., Welch; Crescent Motor Car Co.; Fee Electric Car Co.; Regal Auto Co., Regal; Oakland Motor Car Co., Oakland; Rapid Motor Car Co., Rapid; Brush Runabout Co., Brush; Blomstrom Mfg. Co., Blomstrom; Anderson Carriage Co., Detroit electric; Standard Automobile Co., Packard; Fee-Bock Auto Co., Elmore and Pope-Waverly; Motor Car Co., Cartercar; Wayne Auto Co., Wayne; Reliance Motor Car Co., Reliance; Jackson Automobile Co., Jackson; International Harvester Co., International Auto Buggy.

The other exhibitors are: Ajax-Grieb Rubber Co., C. M. Preston, Michigan Storage Battery Co., Diamond Rubber Co., Desmond Speedometer Co., Wildenpin Tire Co., Charles E. Miller, Gemmer Mfg. Co., Pittsburg Lamp & Bross Co., Michelin Tire Co., B. F. Goodrich Co., Morgan & Wright, Continental Caoutchouc Co., Jones Speedometer Co., C. F. Splitdorf, Goodyear Tire & Rubber Co., G & J Tire Co., Hartford Rubber Works Co., Heinze Coil Co., Norris Auto Co., Hibbard Engineering Co., Fisk Rubber Co., N. Y. & N. J. Lubricant Co., Perfection Non-Skid Climber Co., Witherbee Igniter Co., J. L. Gibney & Bro., Auto Igniter Co., Visor Knitting Co., Elastic Tire Filler Co., John H. Thompson & Co., Economy Cycle Co., Palm Engineering Co., Seitz & Co., F. Kicherer, Light Mfg. and Foundry Co., W. E. Metzger and Excelsior Supply Co.



THIRD FLOOR, STORAGE AND CHAUFFEUR'S ROOM IN PALMER & SINGER BUILDING

Device to Aid in Applying Tires.

Because it is deemed more difficult to apply a tire to the rim of a wheel when that rim is a demountable one, than when it is a fixture, a foreign inventor has lately devised a special form of tire manipulator consisting of a stand carrying a spider adapted to grasp the rim from within and hold it securely while the tube and casing are being applied. In addition to this, the fixture contains within the frame and attached to the spider, a three-cylinder air pump which may be actuated by rotating axle about which the spider is mounted.

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CHAUFFEUR ON CHAUFFEUR STATUS

The Calling not Unsuited to Men of Refinement—Feminine Arrogance Blamable for Some Aspects.

Like the servant question, the chauffeur problem is always with us, and in many respects woman is as deeply at the bottom of the one question as she long has been at the other.

The status of the professional automobile driver is far from settled, in fact, the relative position of the chauffeur in the staff of employes or servants of the household is so far from being definitely fixed that the interesting question as to whether he ranks with the secretary, the valet or the coachman is one that must be answered, and by that answer will be largely decided what type of men are to be entrusted with the lives of family and friends and the care of an expensive vehicle which may easily be mishandled, or ever worse, permitted to be destroyed by failure to take proper care of its mechanism.

I have been a professional chauffeur and as such encountered the difficulties and drawbacks of the work, even as I experienced the delights of driving a car, and I stoutly maintain that I am honest, despite the assertion by a cut rate second hand automobile dealer that honesty is rare, if not indeed entirely absent from the makeup of men of the wheel. I have accepted the commissions offered by dealers from whom I have bought supplies and have in turn given them to the employer who paid the bills, but I can readily understand that this statement will not be believed by the seller or purchaser of second hand cars or supplies whose business would naturally bring him in contact with only that class of chauffeurs whose transactions proclaim them to belong to a type with which this article has little to do.

The question of what grade of men is ultimately to be considered as the typical chauffeur can be answered by saying that it depends on the treatment which they will receive; and that depends very largely on the position taken by madame.

I read the assertion of Price Cutter and Bargain Dispenser Froelich of the Times Square Automobile Co. in last week's Motor World, that "all chauffeurs are crooks," and I don't agree with him. Coming from Froelich I would not give the matter much thought and certainly would not break into print on a subject introduced from such a source, but as there are some good, substantial citizens who have expressed themselves on the chauffeur question in such a way as to show that they have come in contact with only a certain element of the professional drivers I am glad of the opportunity to take up the subject and suggest the other side of it, that side which treats of the capable, self respecting employe.

If chauffeurs as a class have a bad name, it is because of the notoriety given a few of their number, but it has not been thieving or dishonesty that has brought the disagreeable prominence. Generally their presence in courts was due to speed law violations, and their ill repute with a portion of the public is almost entirely because of selfishness in refusing to yield a right of way and their inexcusable retorts to persons who have insisted that highways are for general traffic instead of for the exclusive use of automobiles. I think any one will agree with me that the criminal courts hear more charges in which bankers, lawyers and clergymen are defendants than they do of chauffeurs accused of dishonesty; reckless driving may be criminal, but it is not dishonest.

Another thing that has helped to strengthen the opinion that drivers are an illiterate, uneducated species, is the custom of "smart" writers of stories in which chauffeurs figure to put into the latters' mouths words and phrases suggestive of the street gamin. They are made to say "Naw" for "No," "Whatcher" for "what are you" and hundreds of other solecisms which I have heard few of them use, and which I venture to say would be as unintelligible to them as the lingo of the hobo.

I grant that there are chauffeurs who are the outcasts of the race track and livery stable, but they are in the small minority. There are others—a great many of them—who are expert machinists, men who have served their apprenticeship in machine shops—careful, steady men, self respecting and competent, who prefer the outdoor life to confinement at the lathe or miller; they are not college men, but they have had a good grammar school education and are by no means dishonest or ruffians, or even "tough," and there is still another and smaller class, made up of college men, some of them even graduates. They are professional chauffeurs, because the work, in itself, is entirely congenial, and because the outdoor life and the feeling of control and of responsibility appeals to them. It affords chances for touring through the country and the pay is far better than can be secured in most office and store pursuits. Another thing that is responsible for the presence in the ranks of men who have had the advantages of an extensive education is some physical disability. I do not mean that broken down cripples or physical wrecks are driving automobiles, but I do mean that there are very many instances where the outdoor work is being done by men who are correcting or checking some slight lung or throat or nervous trouble, which outdoor life is the only means of remedying. I know also of cases of men who were fitting themselves for a profession, studying medicine and reading law, whose ambition was responsible for a too close application to books, which led to warnings from the occulist so much dreaded by the student. It meant an entire change of life, and what is better or more delightful than the seat behind a steering wheel? Is there any comparison between that and a life behind a desk or counter, which holds small promise, while the former affords an adequate remuneration and gives an opportunity for eyes or health to regain a condition that will permit of the resumption of studies? Is there any comparison between the close, foul air in a shop which so enervates as to sap one's vitality and make it impossible to perform even small effort at night, and the fresh air of the streets or country which exhilarates and makes possible a judicious use of the eyes when the day's work is done? Positively there is no comparison, and many refined and educated men have realized it while many more will do so; and the time will come when a tough element will be absolutely foreign to the ranks of professional chauffeurs.

Of course there are drawbacks which will affect the man of refinement. He does and always will refuse tips. He would prefer that they be not offered. The temptation to accept a five or ten dollar bill, and sometimes a twenty, is very great, but I know men who refuse it. They refuse it on principle, declining to be placed on the level with cab drivers, barbers and waiters. This type of man looks upon his work as being of a more or less confidential nature. He attends to many things for his employer which could not be entrusted to a valet, but which are not of sufficient importance to occupy the time of the secretary. He hears the private communications which take place in the car and appreciates that these confidential talks are possible only because the owner believes that his chauffeur can be relied upon. With an irresponsible driver this feeling of security is impossible.

It is true that a certain element are grafters. They do look for commissions and will deal only with firms who give them. Naturally these men have no interest in their employer's welfare and will buy an inferior article at a high price for the sake of the rake off to them in preference to purchasing a better grade that is sold at so low a figure as to make discounts impossible. A grafting chauffeur is a mighty expensive parasite. Not satisfied with commissions on things bought because of actual need he will create the need for the sake of more commissions. Tires are a means of an almost definite income. I know whereof I speak. When you see a chauffeur driving his machine on the car tracks, with a good highway right at hand, you can come mighty close to betting on a sure thing if you wager that he is trying to use up tires that he will replace by buying of a house that gives commissions. Why, I can name a place where they will give me $40 on every set I buy, and the tires are mighty poor ones, too. But this class of men is not

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typical. Occasionally they are met with and they are usually so loud mouthed that you give ear to them and imagine that they are representative because by their noise they dominate. The quiet, self respecting chauffeur has none of these experiences that he can relate, and so is so seldom heard of that many do not know of his existence. too often when the chauffeur subject is discussed, the debate revolves around some low born rascal who has made a nuisance of himself and given an entirely false impression.

If employers would expect the drivers of their cars to be as neat and respectable as the clerks in their stores or offices, and would treat them with the consideration and respect that they show these clerks they would be taking a long step toward raising the standard of the men and one which would result in securing an enthusiastic and consciencious service with the result that repair bills and replacement charges would be so reduced that automobiling would cease to be an expensive luxury as is now the case when irresponsible drivers are employed.

The matter of wages is to be considered, too. Of course an inflexible rule cannot be adopted. The nearest to a standard that can be adopted which to my mind is equally fair to both parties would be to pay a man as much as he could earn in another business. Driving a motor car is not a profession; in fact, at this date it scarcely can be called a trade. There is no apprenticeship to be served, no long course to be studied. The competent chauffeur requires intelligence, some mechanical experience and native ingenuity and with these personal attributes he is not dependent on only the one class of work but can find a market for his ability in some pursuit other than that of driving an automobile. To pay $25 a week—the usual price in cities—to a person who could not get over $12 or $15 in any other work, is as absurd as it would be to pay the latter sum to a man who can earn $25 a week in some other work. Personally, I want to see the riff-raff driven out of the ranks and there's no better or quicker way of doing it than by paying just about the figure that the world puts on their ability.

Sometimes chauffeurs are heard comparing themselves with locomotive engineers, which is the sort of talk that makes a thinking man weary. Nobody ever saw a train in charge of an 18-year-old boy. The one job takes years of training, the other requires only the amount of a state's registration fee. Weed out the ignorant, grafting, undesirable element and you make room for the decent chap who is a desirable acquisition.

The most serious obstacle, however, to the educated man is the attitude of "milady." Invariably she insists that chauffeur and coachman are on the same plane. She wants her servants to be liveried—an impossible condition for the man of refinement. She wants him to act the part of the flunky; to touch his hat when she speaks and in all things to offer an outward sign of subservience. As a result she usually has a man who can steer the car, but who cannot make more than the simplest repair. When a puncture or blowout occurs, it means a drive on flat tires rather than to soil the white breeches and broadcloth uniform coat, and altogether the situation is absurd and incidentally impossible.

The time is not far distant when the better class of men are going to be in such demand that concessions will be made by many employers in the hope of enticing them into the field. When they succeed the restaurants and roadside inns will provide suitable accommodations for chauffeurs apart from the servants' quarters, and the man whose soiled hands and clothing make it impossible for him to mingle with the patrons of the place will yet find a niche where he can eat in peace and with dignity, which he cannot do at the tables reserved for cooks, hostlers, bootblacks, etc. The arrival of that period will be quickened when "the lady of the house" realizes that it is possible for a chauffeur to be as much of a gentleman as the man who tutors her children and treats him accordingly.

But to go back where I started: When I read Froelich's assertion that chauffeurs were "dirty, low and dishonest," I recalled a story of an old veterinary in the town I hail from, who one day prepared a powder for a sick horse and gave it to his new assistant to administer. The assistant asked how it was to be done, and the doctor gave him a large glass tube and told him to put the tube into the horse's mouth and blow the powder down his throat. A short time afterward there was a great commotion and the doctor rushed out to find his assistant in trouble.

"Where is that medicine?" he shouted. "What's the matter?"

The assistant coughed several times severely and then spluttered:

"The horse blew first." —M. R. L. C.

Why Some Tires are Selected.

"Oh, it's been a pretty good day for me, all right," said a loud mouthed chauffeur as he entered the chauffeur's room in the garage and removed a handsome fur coat that his employer had given him for Christmas, and after lighting a cigar, dropped into a comfortable chair. "I've done pretty well, I had to have a set of tires, so I went to a cut rate house. I looked at the tires and asked the 'bargain man' if they were good. They are not as well known as some other tires, but he said that they were all right so far as he knew, but he ducked when I suggested guarantee. 'They may be all right," he said; 'some last and some don't, but there's 40 per cent. in it for you if you take them; so I took $150 worth and pocketed $60 for mine, and that's only a starter, for the quicker they wear out the sooner I'll get some more."

"But how about your boss?" asked another. "It don't seem to me that he is getting a square deal on that sort of a tire."

"He can stand it," responded the grafter. "If he's got money enough to own a car he can afford to pay my commission, too. I'm looking out for my end and he can look out for his."

"Well, I call it a pretty rotten way to treat a decent man who gives you a $100 coat; besides there's the question of honesty in that sort of a transaction."

"Oh, hell!" ejaculated the first speaker, "What's $60? I know one fellow who got $1,400 for recommending a certain make of foreign car which his boss bought. He got caught and lost his job, but I'll lose mine for that price any day. A fellow can afford to loaf when he gets a lump like that."

Chauffeur-Actor as Elephant Legs.

Most men as a rule play many parts during their lives, sometimes of their own free will, frequently in deference to the dictates of necessity. Perhaps the greatest "Jekyll-hydeians" are actors, who frequently are called upon to double parts. It has remained for a chauffeur to attain the acme of versatility in this line, however. The driver of one of London's popular comedians was summoned at Litchfield on a charge of having driven his car without a rear light. He did not appear, but a letter was read from his employer, pleading as an excuse for his absence that he was engaged at the Theatre Royal, Manchester, " playing the part of the front legs of an elephant." While in England it is constantly advocated that chauffeurs should not limit their energies to the mere driving of their employers' cars—in fact, gardening, butlering, nursing and so on are prime requisites in a good chauffeur—still it would seem that the curriculum is somewhat extended to include the Thespian portrayal of the front legs of an elephant. It is feared that the whole of England's nursemen-chauffeurdom will be up in arms at the idea of one of its members gamboling about on the stage disguised as the anterior portion of a pachyderm.

Ready Bail for Prospective Prisoners.

Surety company bail bonds are to be available for members of the Long Island Automobile Club any time they may happen to be arrested for alleged violation of the speed law. The difficulty of securing bondsmen upon short notice and the consequent trouble that ensued caused this matter to be brought up before the club's board of governors at their last regular meeting. The governors decided to secure the bail bond, which will be furnished upon request of any member.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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BING!—THEY'RE OFF FOR PARIS

Immense Throng Sees Start of "Newspaper Race"—Snow Shoveling Begins on Very First Day.

No circus parade ever drew a greater concourse of people than did the start of the trip six automobiles may make from New York to Paris, from Times Square, New York City, yesterday, 12th inst. There is no way of computing the number that gathered at Forty-second street and Broadway and that lined the latter thoroughfare its entire length, to obtain a glimpse of the specially equipped and heavily laden cars, but the crowd surely was away up in the six figures. As an advertisement the affair was a great success and proved how many people will go to a little inconvenience for the privilege of seeing something for nothing.

The occasion was the start of what its promoters term an automobile "race" from New York to Paris, which originated in a French brain. It is more of a go-as-you-please any-old-thing sort of an affair, as although there is plenty of land between California and the Bering Straits, the contestants will embark on a boat from San Francisco to Valdez, Alaska, providing they reach the California city, of which there is considerable doubt. The rumor was afloat yesterday that the cars would be shipped to San Francisco by train, after leaving Chicago. This, however, could not be confirmed.

The police had considerable difficulty in holding the immense throng in check at Times Square. Several hundred automobiles were packed in the square, and side streets, but whoever had the parking in charge got beautifully mixed and as a result few people could locate the cars to which they had been assigned.

Mayor McClellan intended to fire the pistol to start the cars on their long trip, but somebody or other told the Mayor that affairs of this sort never start on time, and as a result the city's chief executive did not hurry through his morning bath. At 11 o'clock the Mayor had not appeared at the special grandstand erected on the Seventh avenue side of Times Square, so it was decided to wait for him fifteen minutes. As he was still missing at 11:15, Colgate Hoyt, president of the Automobile Club of America, fired the gun for the start, and the six specially equipped cars, and an escort of several hundred cars, many of them decorated with flags, proceeded up crowd-lined Broadway. The cars that started, and their occupants, were:

Thomas (American), Montague Roberts, driver; Harold Brinker and W. J. Henly.

Prothos (German), Ernst Maas, driver; Hans Knape and Lieut. H. Koeppen.

Brixia-Zust (Italian), Emilo Sirtori, driver; Henri Haaga and Antonio Scarfoglio.

Sizaire-Naudin (French), August Pons, driver; Maurice Berlhe and Lucien Dechamps.

Motobloc (French), Charles Godard, driver; Arthur Hue and R. Maurice Livier.

DeDion (French), Boursier St. Chaffray, driver, M. Austran and Capt. Hans Hansen.

It was an imposing procession that paraded up Broadway. Crowds of people lined the streets and cheered the tourists while small boys threw snowballs. Montague Roberts, driver of the only American car in the contest, and from which trailed a large American flag, naturally received the greatest applause, while the De Dion crew, clad from head to foot in white fur, excited the most comment. It was the occupants of the escorting cars, however, who received the bombardment of snowballs.

Although it was arranged that the cars should reach Albany, 148 miles, before night, not one of them got that far on account of the snow that covered the roads. The Thomas, Zust and De Dion cars reached Hudson, 116 miles, where they stopped over night. Roberts, in the Thomas, was the first to arrive there at 8.20 p. m., followed an hour later by Sirtori, in the Zust. St. Chaffray checked in fifteen minutes after Sirtori. Maas, in the Prothos, decided to stay at Poughkeepsie over night, while the other two cars, left behind in the first fifteen miles, thought Peekskill, 44 miles, far enough for one half day's journey. All of the cars had trouble in the snow drifts, and only strenuous shoveling served to dig them out.

As the chances of any of the cars getting to San Francisco before the roses bloom are 100 to 1 against them, unless they go by railroad, it would seem that Godard and Pons, in charge respectively, of the Motobloc and the Sizaire-Naudin, have hit upon the right idea—to enjoy themselves while they may, by not rushing things. The crews of these two cars stopped at Dobbs Ferry for luncheon and spent more than three hours to feast and to allow a moving picture photographer, whom they are carrying with them, to expose many yards of film. The Frenchmen did not seem in any great hurry to leave the open fireside in the inn at which they stopped.

From general observation and scraps of conversation picked up from the occupants of the cars, it is plain that the foreigners do not begin to realize the magnitude of



START OF THE NEW YORK-PARIS "RACE" FROM TIMES SQUARE, NEW YORK

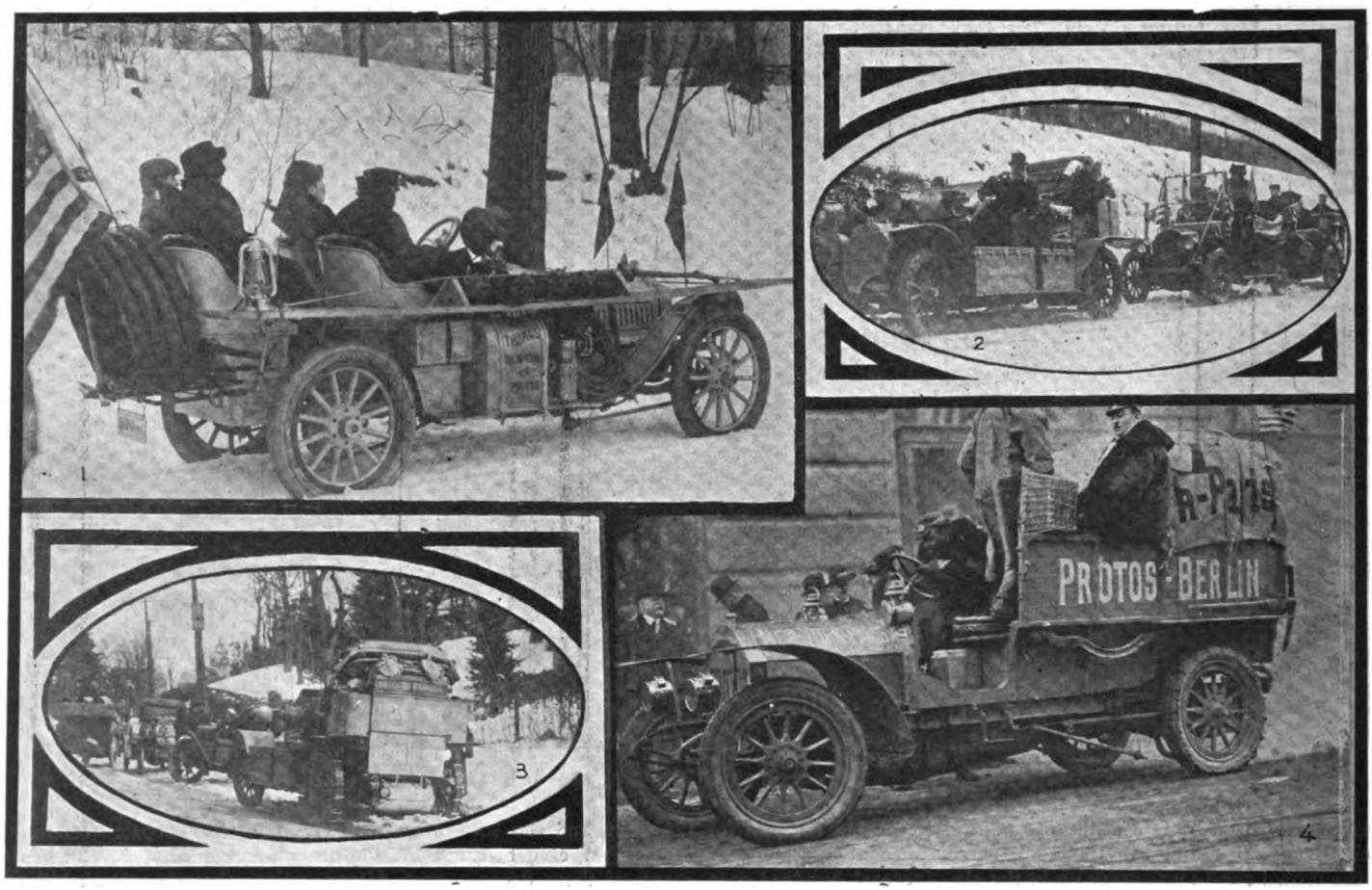
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the task before them. They seem to think that the real journey will not begin until after they have crossed America and reach Alaska. They are possessed of the notion that roads in this country are not much worse than those in France. The gasolene tank on the Moto Bloc may be cited as an example of this ignorance of the foreigners regarding American highways. The tank is situated at the rear of the car, within six inches of the ground. The first big snow drift or sharp rock may show that it has been misplaced.

With the exception of the Thomas and the little single-cylinder Naudin, all the cars, with their elaborate equipment, labor under too much weight. The De Dion, loaded, weighs 6,600 pounds; the Zust, 3,520 pounds; the Prothos, 6,000 pounds; and the Moto Bloc, which seemed to have some difficulty in climbing several of the hills between New York City and Tarrytown, tips the scales at 6,325 pounds. What will happen to them if ever they reach the Rocky Mountains, does not make pleasant surmise. Included in the equipment of the last-named car are three cases of champagne.

All the cars carry rope, ladders, block and tackle, shovels and picks, which, perhaps, is a fortunate thing, as the snow encountered between New York and Tarrytown is nothing as compared to that which will cover the ground in the vicinity of Rochester, to say nothing of elsewhere.. Near Rochester the snow, wheel deep, covers the ground, so that the contest is likely to resolve into a shoveling match before New York State is left behind.

There are really two "races" from New York to Paris, via Alaska, under way. For on Tuesday afternoon, a Werner car left a newspaper office on Park Row, New York City, in charge of Eugene Le Louvier, but taking the unusual route by way of Philadelphia, Cincinnati, Kansas City, St. Louis, Cheyenne, Portland and Tacoma. It will attempt to beat the other six "racers" although it already seems practically out of the running. The car balked before it got on the ferry boat to transport it to Staten Island, and some of its mechanism went wrong five minutes after the ferry trip ended. After a stop of two hours and eight minutes it was persuaded to run into a grocery cart. Five stops for repairs were made between New Brunswick and Trenton and at 10.15 p. m. Tuesday it skidded into a snow drift at Tulleytown, Pa. It was still stuck in the drift at 2.15 a. m. Wednesday, when two touring cars came along and took turns towing it to Frankford. The three Frenchmen managed to get the car to Philadelphia by 5.30 o'clock and spent the rest of yesterday in bed. Their "death" is soon expected, but as "rebuilding" cars en route, or shipment entire by boat, or hauling by horses, or dissembling the cars and packing the parts in carts or on dog sleds, or any other old thing is permissible in "races" of this sort, there is no telling what may happen or what the "contenders" may or may not do.



1. THE LIGHTLY-LADEN THOMAS. 2 AND 3. THE MOTOBLOC STOPPED FOR LUNCHEON AT DOBBS' FERRY. 4. THE HEAVILY-LADEN PROTOS

San Antonio's Absurd Speed Limit.

San Antonio's (Texas) city council has passed an ordinance that "goes the limit" for absurdity. Because of the excellent streets and 185 miles of fine macadam leading out of the city some scorching is said to have developed, to break up which the council has passed an ordinance establishing speed limits of three miles an hour in the business section of the city, five miles an hour in the residence section and eight miles an hour in the suburbs. When turning a corner automobiles are required to slow down to two miles, while a fine of $200 may be imposed if the driver fails to stop on signal of a policeman.

Folwell President of the Quakers.

P. Donald Folwell was unanimously chosen president of the Quaker City Automobile Club, of Philadelphia, at its annual meeting last week. A. T. James was elected first vice-president; L. D. Berger, second vice-president, and A. T. Stewart, was re-elected treasurer. Harry C. Harbach was elected secretary.

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REMOTE CHANCE TO REACH PARIS

Terrors of Route Told by Real Travelers—Cars May go Through, if Deer or Dogs are Available.

It has been interesting to follow the development of the plans of the New York-Paris race as they have appeared in print from day to day, says V. Steffannson, who was a member of the Anglo-American Arctic expedition. Af first the promoters were undecided between two promising routes—should the machines cross to the Pacific coast south of or near the Canadian boundary, then follow the coast northward to Skagway, Alaska, and proceed thence over the mountains to the Yukon at White Horse?—or should they go from Winnipeg to Edmonton and then across craggy ridge and wooded dale by the mounted police pack-horse trail to the Yukon? In either case they were to proceed "down the Yukon on the ice," and "across Bering Straits from Nome to East cape" (also on the ice). A good many highly diverting opinions on both schemes were secured by enterprising reporters from men whose official titles sound as if they should know more than they do about the north. A person of high political standing in Canada was said to "regard the Edmonton route as feasible," and one of the first men in the geological department in Washington was quoted (correctly?) as saying that "once on the tundra" the autos could get along without much trouble, for they would be able to go along on top the hard-packed snow!

The coastal route from Vancouver to Skagway was soonest abandoned. Perhaps some summer tourist had noticed the cliffs that alternately come perpendicularly to the sea or are covered to the water's edge with close standing, burly evergreen trees. Perhaps this tourist had even gone ashore; his experience may then have suggested to him that where a man in leggings squeezes between trees with difficulty, a six-cylinder car might have its troubles. As for the Edmonton route, a humorist did for that over-mountain scheme. He suggested (and a reporter took him seriously) that as the police trail was barely practicable for dog sleds and pack ponies, and was, beside, in many places too narrow for a machine, it would be best not to try following the trail, but to strike straight across country, making a bee line for Dawson. A man who has succeeded in having this opinion quoted seriously in a newspaper has therein sufficient cause to feel he has not lived in vain. Taking an automobile up the most pathless slope of Mount Washington would be a boulevard compared with crossing the forested ridges of the 2,000-mile wilderness that separates Edmonton from Dawson.

Both these startling wilderness-crossing projects weakened gradually and finally died a quiet death when the much advertising of the race began to bring the opinions of real travelers into the news offices where these routes had been laid out on the wall maps. The machines are expected to make San Francisco in about thirty days and to reach Valdez on the south coast of Alaska by steamer in late March or early April. Thence they are to go over the government mail trail north to Fairbanks on the Tanana, down the Tanana to the Yukon, down the Yukon to its mouth and thence over the land ice to St. Michaels and Nome. Even this plan, a thousand per cent. more sensible than the ones tentatively outlined at the start by the newspaper promoters of the race, will bear careful review.

The thirty day schedule across the continent can doubtless be maintained or bettered, and the late March sailings from San Francisco via Seattle are therefore likely to bring most or all the contestants to Valdez by the first week in April. Then comes the over-mountain trail to Fairbanks. The snow on it is usually so hard packed by much travel that it may be "negotiable" for machines, though one cannot help reflecting that the lighter and more readily dismemberable a machine is, the cheaper and easier it will be to freight it by horses or dogs if necessary. One is also prone to wonder (if one or more machines get to Paris finally) whether the several thousand-mile section of the journey from San Francisco to the made roads of Siberia will have been an automobile race at all, or merely a contest in shipping dismembered engines over swamp and sea.

But granting that the machines could get over the trail to Fairbanks, it may seem on paper as if most of their difficulties in reaching Nome were over. "And thence on the ice of the Tanana and Yukon rivers to Nome," looks feasible enough when you read it in your morning paper at breakfast.

But the trouble is this: It is seldom that any considerable stretch of one of the great northern rivers freezes smooth. The Indian sleds that follow the Mackenzie travel less on the ice than along the banks, for the surface of the stream is not smooth and even, but is jagged as the broken bottles on top of an English stone wall. In the fall the stream has frozen half an inch or two inches thick; then this thin ice has been broken into a jumble of cakes that tilt on edge and again freeze in that position. The Yukon is often heaped and piled so rough that the crossing of it from one bank to the opposite is a serious problem even with a dog sled, while the winter trails along it frequently go over the hills and seldom along the middle of the river. The machines will, therefore, be no less dependent on the made trail after reaching Fairbanks than before.

Having in anticipation brought his machines to Nome, the newspaper program writer tells us that the machines will "run across on the ice" to East Cape, Siberia, if they get "to Nome early enough in the season" (or, as he explains, by May 5 or 10). It seems a bit strange that all the Arctic literature which books, magazines and newspapers have spread over the country cannot get out of the public mind the idea that the Arctic seas are solidly frozen out in winter. So far north as human being have as yet been the winter ice field is broken into floes separated by strips of open water by even slight storms, be it midwinter or early spring, and whatever the temperature. But stranger still than the notion that the winter sea ice stretches solidly from shore to shore, is the idea that its surface is smooth after the manner of the Boston frog pond in January. Let people who think so read the records of any Arctic traveler from Parry to Peary. Or, seeing Alaskan seas are out of the question, let them glance at the story and published photographs of the Anglo-American Polar expedition. A heap of new blasted rock in a granite quarry is smooth compared with the surface of portions of the Alaskan seas, where blocks of ice rise on edge like the stone gables of ruined cathedrals. And as strange as either of these two ideas is, the third one that must be in the heads of those who plan automobiling over sea ice—that the snow on the ice is hard. It is hard in drifts, but between are areas where a man walking without snow shoes would sink to the knees at every step.

But all this talk about the racers crossing Bering Straits on the ice may have no other serious purpose than to make the trip seem more romantic to the stay-at-home. The season will not only be "too late" when they reach Nome (if they do), but it is scarcely conceivable, as the spring thaws will not allow them to get beyond Fairbanks on either ice or snow trail. If this place is reached before the beginning of the "break-up," that part of the valor which is high "discretion" will prompt the racers to stay till the ice is out of the rivers and the Tanana and Yukon steamers can take them to Nome. There they may take ship for East Cape (should not wisdom ere then make it clear to them they had better land at some more southern and more civilized port on the east coast of Asia).

The writer's personal experience, and his collection of photographs to back that experience, do not extend to Siberia. But he has friends who have walked over the Siberian "tundra" (which he has not seen) and over the American "barrens" (which he has not seen). These friends say that the "tundra" and the "barrens" are both in summer and winter much alike. The following things are true, then, of both.

The snow which covers the ground in winter is in occasional places drifted hard enough to bear a man's weight; in spots it might even bear up an automobile. But no more in the Arctic than on the Dakota prairie can one go many rods before coming to a softer area when even dog sleds and men on snow shoes will sink in to some extent. In these places a man without snow shoes will go in to the ankles or waist (ac-

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cording to circumstances); what would happen to an automobile on wheels is not doubtful. One may safely smile a bit at the manufacturer who is going to equip his machine with "eight-inch tire rims to enable it to keep on top of the snow!"

The Russian general, Linnevitch, has written an article on the feasibility of the Siberian part of the race. One reads the cabled summary of this discussion with growing wonder, for he apparently makes light of the gravest difficulties. A thousand mile stretch of uninhabited snow waste is, apparently, not formidable in his eyes, and one begins to feel it no great wonder that the Slavic mind (if generally so sanguine), occasionally misplans a Siberian military campaign. But toward the end of the article comes a statement which raises the general's good sense considerably in one's esteem. His thesis, after all, is merely that if the machines get to Siberia after having conquered the difficult Yukon valley and Bering Straits, they will be equally able to master the more difficult Siberian 1,200 miles that lead to Nijni Kolimsk. He does not, therefore, commit himself at all on the whole project, but merely says if the one can be done, so can the other. And at the very end is a statement which places the Russian general in a class with our own Mark Twain. The substance of it is that the journey from East Cape to Nijni Kolimsk presents no insuperable difficulties to machines that can be dismembered into parts light enough to transport on deer and dog sleds. And even this the cautious soldier qualifies by putting in a "provided the deer or dogs can be secured."

But if this journey to Nijni Kolimsk is to be made not in winter but in summer, it is interesting to remember that in summer the typical tundra is covered with a network of lakes from the melting snow. That part of the surface not covered with matz is mossy—not comparatively smooth, but hummocky with the so-called "nigger heads." Besides being rough, the surface has the moist softness of a wet sponge, and is a pretty continuous bog where the frost thaws out. To add to the poignancy of the racers' experience (if, again, they get this far) will be the Siberian mosquitoes. All the gathered hosts of New Jersey are a faint reminiscence to one who has encountered the winged clouds of bloodthirsty insects that hang like a fog over these northern swamps.

It would be foolish to say it is impossible to take an automobile from New York to Paris approximately along the route at present outlined for the contest; Cleopatra's needle could conceivably be freighted through the same country. What seems fairly safe betting is that none of the machines will, under their own power and on their own wheels, cover any considerable part of the thousands of miles that separate San Francisco from Nijni Kolimsk and the first made roads of Russian Asia.

Personnel of the Racing Board.

Because, in the words of Secretary Elliott, of the American Automobile Association, "it is considered that the time has come when racing matters should be directed not entirely by amateur sportsmen appointed from the various clubs," the Racing Board of that organization hereafter will closely resemble a trade directory.

With the representatives of the trade who just have been made members. the full roster of the board now is as follows: Chairman, Jefferson De Mont Thompson, New York; vice-chairman, Frank G. Webb, Brooklyn; William K. Vanderbilt, Jr., Dave Hennen Morris, S. M. Butler, H. Rossiter Worthington, Alfred Reeves, Percy Owen, A. G. Batchelder and S. A. Miles, all of New York City; A. E. Pardington, Brooklyn; Charles J. Swain, Philadelphia; H. L. Bowden, Harry W. Knights and L. R. Speare, Boston; Benjamin Briscoe. Tarrytown; A. L. Riker, Bridgeport; R. Lincoln Lippitt, Providence; J. J. Mann, Paris; E. R. Thomas, Buffalo; S. L. Haynes, Springfield; George L. Weiss, Harry H. Knowles and Thomas Henderson, Cleveland; A. B. Lambert, St. Louis; George G. Greenberg and I. M. Cobe, Chicago; H. A. Bonnell, Newark, N. J.; Henry Ford, Detroit, and Asa Paine, Minneapolis.

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FRONT DRIVING AND STEERING

Views of Two Well Known Experts on an Important Problem—Its Bearing on Power Economy and Control.

So firmly rooted are the ideas governing present methods of automobile design, that it is almost impossible to conceive of an upheaval taking place of sufficient magnitude to introduce to anything like a universal extent the system of front wheel driving and steering. Yet there are many considerations of a purely theoretical nature which point to such a change as being ideal, chiefly because with the propelling force applied directly in connection with the steering action, the tendency to skidding and unmanageability in deep mud or snow would be largely eliminated.

At the January meeting of the British Institution of Automobile Engineers, a symposium of this absorbing topic was presented by Dr. Hele-Shaw, inventor of the clutch which bears his name, and a well-known scientist, and R. W. Harvey Bailey, an engineer who has been closely associated with experiments in front driving for a number of years. Several systems of front driving are in vogue at the present time, both here and abroad, but it is safe to assume that the average motorist has little or no comprehension of the soundness of theory upon which they are based. Historically, the front driven vehicle is very old. Says Mr. Bailey in this connection:

"As a matter of fact, the first steam vehicle, built in 1769 by Cugnot, was a three-wheeler, driving and steering on a single front wheel, while the first vehicle Hancock built was on the same lines exactly.

"Again, in 1862, we find Pattison in evidence with his combined front driving and steering four-wheeler, whilst in our own day, in 1895 and 1896 Messrs. Thornycroft made their first attempt at road locomotion with a vehicle that drove the front wheels, but steered by means of the rear wheels."

Probably, as he explains, the earlier attempts at front driving were instigated largely on account of the use of the three-wheeled vehicle and the, then serious, difficulty of providing for differential action in turning corners, existing where two wheels were used in propulsion. All more recent attempts in the same line he ascribes to another trouble—universally prevalent, and "generally called 'skidding.'" While this may be, and frequently is, the result of bad driving, the author states it as his experience based on trials with both types, that basically it is an inherent trouble with the system of propulsion. When a car of the ordinary type is placed upon a turn, a difficulty arises which he explains as follows:

"It is at once clear that the force propelling the vehicle is, in a rear driver, parallel in its direction to the center line of the car, whereas the front wheels are set at an angle to this direction, varying to suit the exigencies of the moment.

"Analyzing the forces which are brought into action at the moment when an attempt to turn is made, it is plain that the car itself will only follow the curve as set out by the position of the rear wheels, because these lay out a curve of least resistance, resulting from the fact that the wheels are vastly easier to revolve on their axis than they are to slide bodily sideways.

"Although this is generally true, it is not always so; and as the resolved force along the direction of the turn becomes less, the greater the angle of deflection becomes, there comes a time when, if the roads are greasy, the resolved force is too small to act upon the vehicle and alter its direction, because the reaction of the road on the wheel caused by the propelling force is itself too small to prevent the wheel sliding bodily forward in the direction of the propeling force. This, then, is obviously one serious defect in the rear-driving car."

Front driven vehicles he divides into two general classes, as those in which the steering is done from the rear, and those in which the driving and steering are performed simultaneously from the front. The former he dismisses at some length and for reasons already well known to those who have had experience with vehicles of the type of the electric cab species at one time so common in New York City service, for instance. Of the second class, he points out that "a very slight consideration of the conditions shows that, whether running straight or making a turn, since the steering wheels are also the tractors or drivers, it is plain that in this type at least since the propelling forces are always in the proposed line of travel, that here is a design which is mechanically correct, as the propulsive force tends to stability, being never predisposed to skidding."

Regarding the method of gasolene propulsion as applied to front driving and steering, he remarks that it is often subject to adverse criticism because of the great loss of power supposed to entail upon the use of the universal joint mechanism in the driving shaft.

"This notion is based upon the misconception that it is often working on a big lock, whereas, as a matter of fact, almost 95 per cent. of the driving is such that the joint is only a loose coupling in a practically straight length of shaft and as such, of course, has no movement in its individual parts; hence it cannot, while so acting, be a source of loss," he explains.

"There is, of course, a fairly large loss of power when the vehicle is turning on full lock (50 degrees), but even then the front driver would compare favorably with a rear driver on the same lock, because in the front driver the loss of power through the joint is more than compensated for in the fact that the front driver exerts its energy in the direction of required motion, while a rear driver exerts its forces in a direction inclined at 50 degrees to the desired direction. . . . .

"Considering, finally, the benefits of the system, first and foremost stands the fact that front driving and steering vehicles are non-skidding—not that the author would mean that taking corners at full speed they will not skid, but that under ordinary fair usage they are non-skidding.

"It is only a question of grip in relation to the centrifugal force in such a case as above referred to, and it is obvious that making the speed high enough anything will fly outwards from its path; but even then—and this requires emphasizing—the act of turning the wheels, since these are drivers, will admit of some control, even under such circumstances."

Another phase of the matter is brought up by Dr. Hele-Shaw, who refers to front and rear braking—a subject which has recently been aired to a considerable extent in British motoring circles. "It is easy to see that so long as the vehicle is being propelled by the front wheels, the vehicle as a whole will only follow the tracks of the front wheels, and would not be inclined to skid," he says, "that is, assuming the back wheels to run easily; but it is not so easy to understand what happens when the brake is applied to the front wheels.

"It looks at first as if the free-running back wheels and most of the weight behind would tend to over-run the front wheels and slew round the vehicle, causing what is commonly known as a side-slip. On looking, however, into the matter a little more closely we see that the difference between the cases when india rubber and pneumatic tired wheels are free running and with the brake applied should be taken into account. It only needs simple experiment to demonstrate the fact that whereas a wheel of this kind when free running tends to move most easily in the direction of its plane of rotation, when the brake is applied the exact opposite is the case, and it is much easier for a wheel on a greasy surface to slip sideways than to move forward in its own plane. We therefore have this result, that if the brake is applied on the front wheels, any tendency to slip may be checked by the driver adroitly using his steering wheel, the hind wheels which are free running following in the direction of the vehicle, without any tendency for the mass of the vehicle to swerve sideways. If, however, instead of the front wheels being braked, the brake is applied to the back wheels, it becomes an extremely difficult thing to prevent side-slip taking place, unless non-skid devices are used, even by skilful manipulation in steering the front wheels."

As to the comparative controlability of front and rear driven vehicles, he refers to several tests of his own recently carried out with a British front driven electric vehicle and another vehicle of practically the same

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specifications, but rear driven. While crossing a patch of artificial mud, it was found that the front driven machine held its course every time, while the rear driven one manifested a decided tendency to swerve. When an attempt was made to alter the course of either vehicle on the greasy patch, it was found that it became more or less uncontrolable. A subsequent trial of the front driven machine made by altering the weight distribution over the front and rear axles, developed the fact that as the weight on the front wheels was proportionately diminished, the controlability of the vehicle was correspondingly decreased. The well known performance of the Christie car is an example bearing out the same theory.

The principal advantages of the electric and hydraulic systems in contradistinction to gasolene and steam, are, as he explains, that they are directly applicable to the driving wheels, as is done with the American Couple-Gear vehicles, thus concentrating the power plant and simplifying the mechanism to a most desirable extent. Naturally, such systems are not applicable to light and swiftly moving vehicles of the pleasure type, as at present constructed, though several attempts are being made abroad to introduce fore carriages in machines of the town car type.

To Avoid Misleading Ammeter Tests.

While it is an excellent plan to test ignition dry-cells frequently in order to keep track of their performance and ensure long life, it is well to make sure that the observations are made with a reliable instrument. With many of the cheaper grades of ammeter which are sold for battery testing, the tendency is for the reading to become higher than it should be after some little service has been seen, with the result that the batteries under test appear to be giving from two to four times as much current as is actually the case. This fact may account for some of the many tales which are heard of the sudden failure of batteries which up to the last have continued to give a high amperage. The test, of course, is useless unless the instrument is correct. On this account it is well to test the batteries occasionally by leading temporary wires from a switchboard instrument, which is apt to be pretty nearly standard, afterward checking the portable instrument by taking a second reading from the same batteries.

Speed Indicator in Compact Form.

A new speed indicator which has just been brought out in England takes the form of a tiny magneto, mounted on the axle of the car and driven directly. The indicating device, which is merely a miniature voltmeter graduated to read in miles per hour, is carried on the dashboard, and also includes an odometer of the ordinary mechanical type. The voltmeter wires and the driving shaft of the odometer are enclosed in a single flexible casing.

FOR ADJUSTMENT OF THE TIMING

Simple Attachment Adapted to the Use of the Inexperienced—How It is to be Employed.

To many drivers the possibility of some time being called upon to time the valves or ignition of the motor without any advice or help from more experienced sources, exists as a very real bugaboo. To obviate any difficulty on this score, a London supply house recently brought out a timing device which is wonderfully simple and, granted that the method of timing upon which it is based is one which is applicable to the average motor, should entirely remove my fears of disaster which the inexperienced engineman may entertain. In a word, the device consists of a small metallic disc which may be clamped to the clutch, fly wheel or some other moving part of the motor turning in synchronism with the crank shaft, and upon which are indicated the points on which the valves are to open and the ignitor circuit to close. The proper point is in every case located by means of a spirit level which gives an absolutely correct setting, provided the instrument has been properly adjusted in the beginning.

In order to adjust the timing of the valves, for instance, all that is necessary is to turn over the crank shaft until the piston has reached the top of its stroke and then clamp the device in place, turning it so that the level is horizontal, and an arm to which it is connected registers with a point on the dial of the device which is marked zero. To facilitate this and the subsequent operations, the dial is perforated at the proper points, and a pin carried by the arm is made to fit into the holes in turn, thus locating the position of the level absolutely in every case. The pin and arm are then turned to the point marked "open" on the exhaust circle, and the crank shaft is revolved until the level again balances horizontally. The mere act of balancing the level is sufficient to bring the piston to the proper position. After setting the piston in this way, all that is required is to set the valves to open or close at that point.

Three sets of perforations are placed on the dial in as many circles, the outer one applying only to the timing of the exhaust valve, the inner to the ignition setting, and the middle one to the setting of the inlet valves. The perforations relating to the ignition system are two in number, and refer to the location of the point of maximum retard for high tension magneto and jump spark systems, respectively, while for the low tension magneto system, the hole marked zero, is employed.

By following the settings laid out by the perforations, only one method of timing is obtainable, it will be observed. This is according to a design of the inventor's and allows for early exhaust opening and late closing both of exhaust and inlet, while for a period of about 5 degrees at the beginning of the suction stroke, both the inlet and exhaust valves are open. Out of deference to those who prefer their own settings to this, as well as to permit of comparing the adjustment of the valves in all the cylinders of a multi-cylinder motor, a second and interchangeable dial is provided which, unlike the first, is without perforations, but instead is divided into degrees on one side, and percentages of the circle on the other. By using this arrangement, it is possible to obtain any system of timing exactly as laid out in a chart.

Raising the Limit of Compression.

It has been supposed for several years that the practical limit of compression pressures for internal combustion motors of the common type was somewhere about 80 pounds per square inch. That improvements in design may ultimately raise this limit, was shown by the results of a series of experiments conducted by Professor Burstall of Birmingham University, England, who succeeded in making successful tests at more than double what is usually considered the limit of compression pressure.

Fully two years were consumed in the research of which this was the conclusion, the broad purpose of which was to discover the relation between initial compression and heat efficiency. Considerable alteration of the engine under test was one of the incidental complications to the investigation. Special ignition apparatus also was required to withstand the tendency to preignition, and many unsuccessful trials were essayed before it was found possible to run the compression above 140 pounds. When finally the motor was got into working shape it was found that it did its best work when running at 175 pounds compression. A thermal efficiency of 43 per cent. was developed under these conditions, which is as high as has yet been attained by any motor with the single exception of the Diesel machine which runs upon a specially modified cycle. The results though instructive in a general way, have no present application to automobile practice, beyond showing the existing possibilities.

Grounding the Plug Wire.

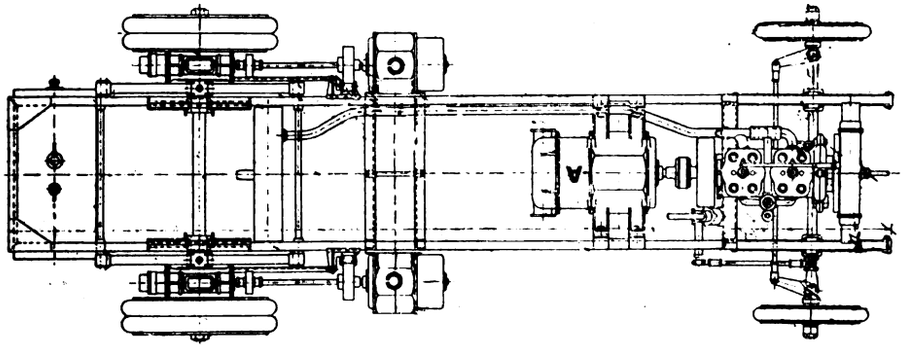
When for any reason it becomes necessary to run the motor with one or more of the spark plug terminals disconnected, care should be taken to ground them positively against the cylinders or some other metallic part of the machine. Otherwise the full voltage of the secondary current will be discharged through the infinite resistance of the air, and the chances of breaking down the insulation of the coil will be very great. Removing the plug wire altogether inflicts upon the coil affected the worst possible strain to which it can be subjected.

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WORM GEAR IN INDFPENDENT DRIVE

Practical Features of Twin Motor "Mixed" System in New Omnibus—Simple Methods of Control.

Mixed systems of auto-propulsion are multiplying with great rapidity, and it would appear that with each new comer, some commendably ingenious device is brought out. Thus, in the case of the new Hallford omnibuses, which just have made their appearance in London, the unique feature consists in the use of a special form of independent drive for each of the rear wheels. Instead of the common arrangement of the motors with their axes parallel to those of the driving wheels, they are arranged longitudinally



of the car, bolted to the outside of the frame side members, and driving through cardan shafts and worm gearing.

The layout of the power plant and transmission is seen in the accompanying plan view, in which A, is the generator, directly connected to the gasolene engine mounted vertically at the fore part of the chassis, while C-C are the two motors, each of which drives its own wheel through a suitable cardan shaft and worm gearing. In this connection it is interesting to note that the worms instead of being mounted in fixed relation to the wheels, are carried on independent ball bearings, and transmit their power to the wheels through jaw clutches, which permit a certain amount of freedom of movement and allow the worms to seek their own alignment with the gears, irrespective of any possible distorsion of the wheels and axles, also relieving them of all shock. Just back of each motor is mounted a small band brake. The gear reduction in the worms is 12 to 1, so that the motors run as high as 1,200 revolutions per minute. Consequently the brakes, which are interconnected and balanced, are very powerful.

The gasolene engine is of conventional pattern and rated at 30 horsepower. The electric generator to which it is connected is mounted directly in the chassis frame, and is of the "interpolar" type, that is to say, it is provided with two sets of field windings, one of which is in shunt and the other in series. This arrangement, while intended primarily to prevent sparking at the commutator, also is of value in that it permits the machine to pick up its load on closed circuit when starting the vehicle from rest.

The control system is based on altering the excitation of the dynamo, by passing the field current through suitable resistances. In this way no great proportion of the energy of the gasolene motor is lost in heating resistances, and the driver's mastery of the vehicle is in no way impaired. In addition to this, provision is made for operating the motors either in parallel or series. Speed control is therefore obtained in two ways, that is to say, by varying the current strength in the generator, or by accelerating the engine.

For stopping, a foot-operated electric cutout is employed, and this is so placed on the right of the foot board that in order to reach it the operator must remove his foot from the engine accelerator, thus slowing the generator, and reducing the voltage of the main current before circuit is broken. An interlocking device connected with the foot switch, prevents the raising of the pedal to its full height except when the controller lever is in either the forward or reverse position. In addition to this, the engine is governed automatically, to prevent racing, or throttling below a certain minimum speed. A throttle lever is mounted on the steering wheel in addition to the lever controlling the position of the rheostat, which is used in conjunction with the foot accelerator.

By virtue of the arrangement of parts employed, it is possible to gain access to any of the important organs of the transmission at any time without stripping down the chassis or running it over a pit. The motors, in particular, being mounted on the outside of the frame, are in a thoroughly accessible position, while the generator may be got at by merely raising the foot board in front of the driver's seat. Further than this, the use of independent drivers for each of the rear wheels, does away with the requirement of a mechanical differential, as is the case with any double motor electric system, but in addition to this, the manner of placing the motors, renders the rear axle essentially simple, and affords a high gear ratio with that most desirable of all features, a silent drive.

WHEN GREASE IS NOT A LUBRICANT

Resistance It Offers When Stiffened by Low Temperature—Evils that may Result Under Such a Condition.

Safe to say the average motorist has absolutely no comprehension of the amount of resistance offered by a bearing which commonly is lubricated by grease or so-called "hard oil," when the atmospheric temperature is so low as to cause the grease to stiffen perceptably. Instead of acting as a lubricant under those circumstances, the grease actually increases the natural resistance due to the load on the bearings to a degree which at times throws strains on the mechanism which are a menace.

In the case of counter shaft bearings, for instance, where the possible addition to the regular load which might be brought about in this way is comparatively slight, there is little possibility of harm from this cause. But where sliding gearsets are packed in grease, the very attempt to move one of the sliding groups in order to start the car may be sufficient to spring the connections between the gears and the hand lever of a poorly constructed car, causing the interlocking mechanism to prevent the clutch from being fully seated, or even preventing the gears from meshing sufficiently to secure enough tooth surface in contact to prevent stripping.

In the same way, where grease is used in bearings which are placed at some little distance from the grease cups, there is danger that cold weather may make it practically impossible to force the lubricant through to its destination, turning down the feed screw on the cups simply serving to force the grease past the plunger into the upper part of the chamber and effecting no more useful purpose. In fact, this is one of the greatest drawbacks to the use of grease in cold weather, and not even the tendency to warm the supply slightly as a result of the undue friction set up is always sufficient to ensure perfect lubrication. For generally speaking, the heat so generated is purely local and while sufficient to soften the grease in the immediate neighborhood of the bearing, has no effect on any which may be located in oil-ways or pipes distant only an inch or so away.

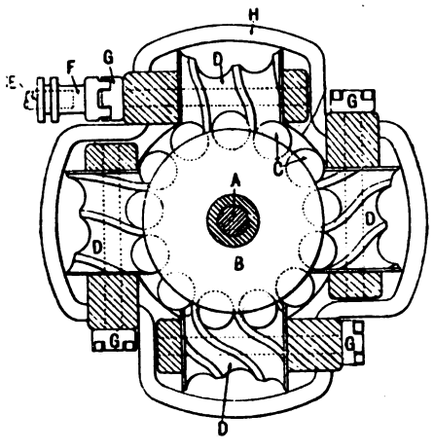
On this account, it is well to be particularly watchful of all parts of the machine which are dependent on grease for lubrication during the cold weather. When the machine is habitually kept in a heated room when standing idle, there is little or no danger of trouble arising on this score. But when permitted to remain in the cold for any length of time, there is a chance that abrasion may occur in the bearings, or that some of the more delicate parts may be sprung. unless care is taken in handling the machine until thoroughly warmed up.

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INTERCHANGEABLE WORM DRIVE

Speed Ratio Altered by Varying Number of Threads on Spiral—Individual Clutches for Effecting Changes.

In connection with the development of the worm drive for motor vehicles, which has been in use by a few makers for several years, a number of attempts have been made to produce a method of speed changing directly adaptable to the worm, thus doing away with the usual gear box and placing the bulk of the transmission on the rear axle. Thus far, these efforts have resulted only in the production of mechanical curiosities. Recently a foreign inventor has added a new system to the list, which hard-



ly appears to be practical, though its ingenuity commends it to notice.

The plan is to employ four worms, all held constantly in mesh with the same gear wheel, the latter, instead of being of the solid type with cut teeth, carrying a series of balls embedded in its surface, which fit into the helical grooves of the worms. Naturally these are all of the same pitch, but by employing one single, one double and one triple thread, the thread angle is varied sufficiently to secure three different ratios of transmission, according to the selection of one or another of the worms as the driver. The fourth worm is single threaded, but is pitched oppositely to the other three, thus affording the reverse movement. Each worm is mounted on a short shaft and carries a jaw clutch integrally mounted with it and adapted to lock with a master clutch when thrown into the driving position.

The accompanying illustration gives a fair idea of the method of mounting and the system used in changing gear. The driven shaft, A, carries the wheel, B, with the ball teeth, C, and is surrounded by the casing, H, which carries the four worm shafts, D, with the clutches, G. The driving shaft, E, carries the clutch, F, which may be engaged with one of the clutches, G. To effect the changes of speed, the casing which is at once, gear housing and carrier for the worms, is partially rotated about the driven shaft, so that the desired worm is brought into the upper horizontal position. When so placed, the clutch, G, may be engaged and the drive established by means of the usual master clutch.

Electric Differential in Mixed System.

Among the new machines employing the electro-mechanical transmission, of which several have been brought out within a year, the system of the Ampere car, one of the brand new French productions, should not be overlooked, because it embodies not simply a multiple adaptation of the magnetic clutch principle, but also extends the same scheme to the differential provision for the rear wheels, which is controlled not mechanically, but electrically, and in proportion to the deflection of the steering wheels. It is in no sense of the word a gearless car, since the ordinary form of transmission is employed, practically in its entirety. The novelty consists in the application of individual electro-magnetic clutches, in place of the usual sliding pinions, all gears being in continuous mesh.

Permanently attached to each driving gear in the change gear group is a magnetic disc, adjacent to which is a magnetic clutch, splined to the shaft, but free to slide upon it for a certain distance. Whenever the field of either of the magnets is excited by directing the master current through it, the effect is to lock the corresponding disc to it, much as a keeper is locked to a horseshoe magnet, thus fixing the gear to the shaft, about which it is otherwise free to revolve. In this way the changes of speed are all effected by manipulating the small switch mounted above the steering column.

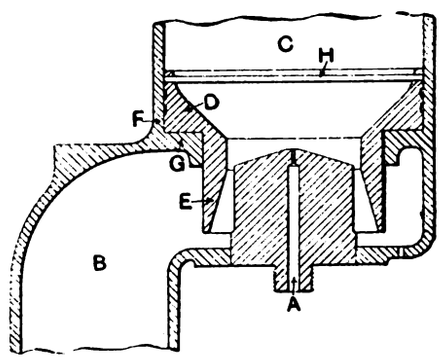
The most unique provision of the system, however, is that corresponding to the differential. Each wheel is mounted loosely on the end of the solid, live rear axle, and carries a disc, similar to those employed in the gearset. A magnet, also similar to those in the gearset, is mounted on the end of the axle adjacent to the disc, and the flow of current through it is controlled by the movement of the steering wheel in such a way that whenever the front wheels are deflected, the driving wheel which has the shorter turning radius is released, the other being held in fixed relation to the axle. In addition to this, whenever the brakes are applied, the current through the rear clutches is discontinued, and liability to skidding is therefore largely abolished.

The controlling current, which here serves merely the purpose of a connecting, rather than a driving medium, it will be observed, is derived from a special form of magneto, mounted on the engine. By an ingenius disposition of the windings, two currents, at varying potentials are generated, one of which is used for igniting the gas in the cylinders, and the other in controlling the transmission. The system is the product of the Société Etablissements Ampère of Billancourt, France.

SIMPLE AUTOMATIC REGULATOR

Quality of Mixture Controlled by Differential Piston—Improvement Effected by Change in Carburetter.

So general is the apparent tendency to increased complication both as to construction and number of parts in the matter of carburetter design, that it is really noteworthy when a fairly simple idea is fixed upon which bears the ear marks of apparent suitability for the purpose. Thus, the Jobling carburetter, which is here illustrated, contains the germ of the true automatic type in which regulation is affected by varying the quantity of air drawn over the fuel jet, a strangling or dash-pot action for preventing rapid fluctuations in the qual-



ity of the mixture, and has the further recommendation of possessing but a single moving part—itself composed of but one piece.

The arrangement in question contemplates the use of the ordinary system of float regulation and a plain jet around which the air current rises as in the simplest form of carburetter. The distinguishing feature of the jet is that its body is much larger than is ordinarily the case, the outside of the jet, together with the inside of the single sliding regulator, forming the air passage. This organ takes the form of a differential piston which is hollow. The lower extension is made not simply to reduce the area of the passage surrounding the jet, but also to partially cut off the entrance of the air to the passage. The upper portion of the valve fits the delivery passage closely and by virtue of the shoulder against which it fits, acts as a sort of suction dash pot to check its movement.

From the illustration the arrangement will be perfectly evident. A is the jet through which the fuel is drawn by the suction of the motor, which also lifts the air through the air port, B, to the reduced area, E, around the jet. The delivery port is directly above through C, while the shoulder, G, in the wall, F limits the travel of the valve, D; H, is a wire placed across the valve and used in removing it from the chamber when cleaning or repairing.

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MODIFICATION OF THE SUSPENSION

Two New Systems Using Supplementary Springs—Vertical Thrust Transformed into Horizontal.

Notwithstanding the great popularity of the so-called shock absorbing devices, it is evident that the use of supplemental springs is constantly growing more pronounced. While the end sought is the same in devices of both types, the method is distinctly dissimilar. With the shock absorber, the plunging action of the springs during the period of recovery from the initial deflection is checked by direct braking action. The supplemental spring, on the other hand, because of its inherent properties, serves to interrupt the oscillation of the main springs, by interference of vibrations. There are various ways in which this object may be effected, such as the use of helical springs in conjunction with the usual elliptical members, the use of scroll-end full elliptical springs, in which the members have different periods of vibration, and also certain systems of equalization by means of coupling bars, which in possible adaptation offor a very wide range of plausible practice.

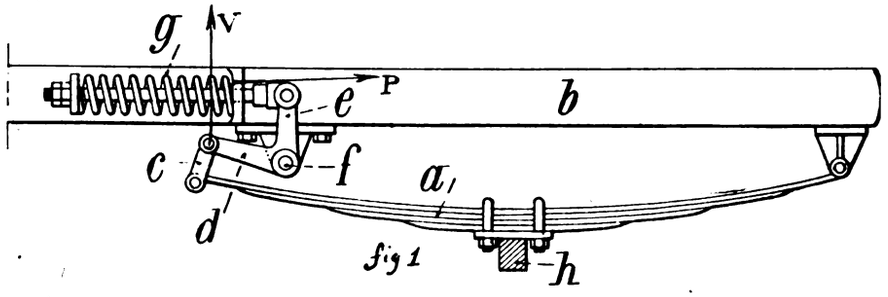


fig 1

In connection with the latter principle it is instructive to consider a couple of recent French designs, which, though quite similar in spirit, yet differ in mechanism to a significant degree. The first, which is known as the Demerliac suspension is capable of two possible variations in arrangement. The principle upon which the system is based depends upon the fact that the reactions of the ordinary suspension are vertical in direction, and that however much they may be dampened or partially surpressed, they still act as vertical thrusts which appear to the passenger in the form of distinct vibrations. The object of M. L. Demerliac in designing the system under discussion was merely that of converting these oscillatory thrusts into horizontal instead of vertical impulses.

As shown in Fig. 1, the laminated spring, a, instead of being linked directly to the frame by means of the ordinary shackles, is connected to a bell crank lever, e-d, pivoted about the fixed point, f, where it is attached to the frame. The horizontal arm, d, is linked to the end of the main spring, while the vertical arm is connected to some horizontal elastic medium, g, attached at m, to the chassis. The elastic medium may be of any sort desired, so long as its position is horizontal. In use, when the axle, h, is raised by an obstruction in the road, the main spring, a, is compressed, its extremities thereby receiving a vertical reaction, which, in the case of the bell crank, connection at d, is transformed into a horizontal motion, absorbed and resisted by the spring, g. This thrust, being horizontal, has no appreciable effect on the occupants of the machine, according to the theory of the invention.

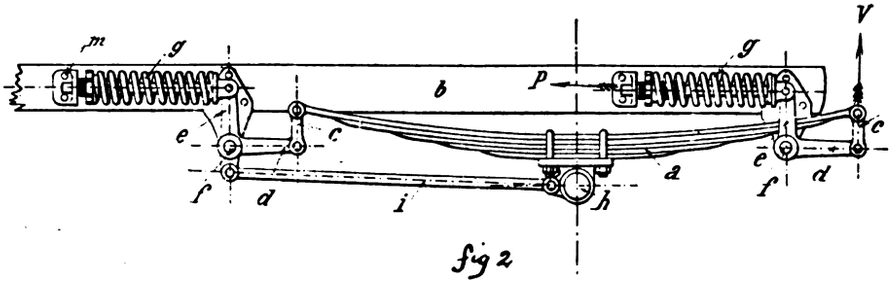


fig 2

In Fig. 2, the same principle is shown as applied to both ends of the main spring, instead of to one end alone. Both balancing members are made to "look" in the same direction so that the resulting horizontal reactions are both toward the front of the vehicle. It is evident that by reversing one of the connections and adapting such an arrangement as is shown in Fig. 1, it would be possible to equalize these horizontal forces. Here the reactions on the pivot points supporting the bell crank levers on the frame would tend to counteract each other in some measure, thus partially neutralizing the lifting tendency at those points. Total transformation of all vertical forces into horizontal, is absurd.

The second system, which is known as the "B. C.," is designed in accordance with practically the same principle as the Demerliac, except that the secondary springs are vertical instead of horizontal and the connection is by means of a straight lever instead of the bell-crank arrangement employed in the latter device. Each extremity of the main spring is connected to a balancer which is pivoted about a point of support on the frame. In each case the opposite end of the balancer is attached to a helical spring, mounted on a rod, which also is connected to the frame.

Thus, when the axle is raised by an obstacle in the road, the compression of the main spring produces a vertical reaction in each of the end connections, which serves to displace the balancers, l-l, which pivot about the points, o-o, and cushion against the helical springs, r-r, which through their connection with the chassis, take up the reactions in a suitable manner. The oscillation of the body over the axle is thus divided between the main spring and the two supplementary ones, exactly as with the supplementary springs, commonly employed in this country, while the difference in time of the natural vibration of the two sets, serves to dampen automatically any tendency to surging which may arise from the inertia of the body. The introduction of any linkage, tending to complicate the suspension, is, of course, distinctly a disadvantage. At the same time it is questionable whether some method more or less akin to the foregoing, is not entirely justified under the circumstances.

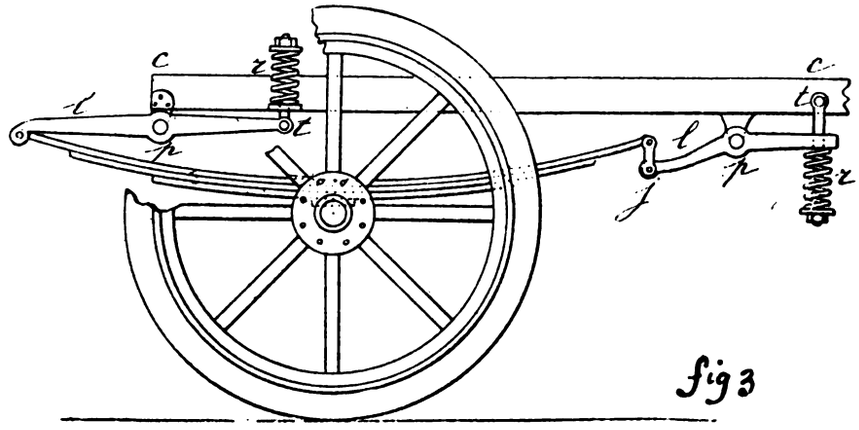


fig 3

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MOTOR 'BUS BOOM SHRINKING

Unfavorable Results of Foreign Mnuicipal Experiment—Some Causes and Their Suggestions for the Future.

As an inevitable result of the tremendous boom which the motor omnibus has suffered in England during the last two or three years, more or less of a reaction is setting in, governed largely, it is safe to assume, by the rapid falling off in stock values. In some instances also, the first equipment has not been maintained properly, and has now reached a point where a complete and thorough overhauling is required, and at an expense which has not been reckoned with hitherto. In this way a number of discouraging reports are heard from time to time, which are in marked contrast to those from other quarters where the business has been managed on more conservative lines.

The municipal experiment of the city of Nottingham, is a case somewhat in point. After two years of operation of three 'buses which formed the experimental equipment, a report has recently been made which is distinctly unfavorable to the new method of traction. The vehicles have been run in a portion of the town not served by the street cars, and have not even paid expenses. The receipts per vehicle mile for the streets cars amounted to 25 cents on the average, against an average of 20½ cents for the 'buses. The working costs of the streets cars, on the mile basis amounted to 14½ cents, while those of the 'buses are not given in the official report. The total receipts of the experimental vehicles during the second year, were, however, $1,263 more than the total receipts for the same period. This, of course, is construed into a complete indictment against the motor vehicle in this case, and is likely to be held up as a fair example in others where the possible adoption of the system is under discussion.

Without fuller particulars as to the exact traffic conditions in the section served by the motor vehicles, it is impossible to question the justice of the report. But it is well known that vehicle-mile and load-mile figures are not invariably as representative as they purport to be, and that the success or failure of any method of transportation in one locality, is not proof positive of its inherent qualifications. The point is that the boom period being passed in England, so far as the motor 'bus is concerned, that vehicle must now do battle to a vast amount of adverse criticism, which is not always as unbiased as it appears. Transportation interests are well grounded and slow in giving up their prerogatives. Schemes which are prey to the fluctuations of the stock market are equally apt to suffer with those fluctuations. The complaints of the noise, and speed, and skidding of the motor vehicle are as nothing compared with the apparent logic of unfavorable statistics coming from apparently disinterested sources.

An exactly similar situation is due within a year or two in this country, not with the omnibus, but with the taxicab, which just now is subject to so much inflation. It is a condition which nothing can prevent and which is practically certain to come. In its effect on the real service of the motor vehicle to the public, such a reflex of sentiment is only temporary, but at the same time, its influence on the market and the industry, even though temporary, is apt to be of some little consequence. Only one policy can be held to offset its effects, moreover, and that is one of conservatism in investment and patience in awarding judgment until such time as the boom period, or such conditions of novelty as might foster it are passed.

Municipal Motoring Minus Graft.

Patrolman Bauer, of the Roslindale substation, West Roxbury, Mass., does not fear investigation of his methods of using municipal automobiles. Patrolman Bauer employs a little runabout that has been in continuous use since 1905, and during that time it has covered 33,384 miles during its trips through Jamaica Plains and West Roxbury, the territory to which it was confined. In 1907, 9,251 miles were recorded; 11,627 miles in 1906, and 11,264 miles in 1907. During January, 1908, the odometer registered 1,242 miles. Its service has been nearly as varied as that of the policeman who acts as chauffeur. It has taken rush trips to fires, investigated police court cases, played the part of an ambulance, and given first aid to the injured by conveying them to their homes, and has even broken up street fights. During 1906 it was out 234 days, and in 1907 219 days.

Proposed Letup in Gasolene Restriction.

One of the automobile measures now before the Massachusetts legislature provides for the amendment of the law relative to the storage of explosives and inflammable fluids so as to exempt gasolene tanks in automobiles from its provisions. It would add to the law a new section, as follows:

"The provisions of this act shall not be construed to apply to the keeping or storage of gasolene in tanks or receptacles forming parts of automobiles."

This bill was introduced on petition of William A. Thibodeau and George L. Ellsworth, and is at present in the hands of the committee on legal affairs, which has given a public hearing on the matter.

Taxicabs for the National Capital.

Washington, D. C., will have a taximeter motor cab service beginning March 1st Robert A. Parke, manager of the cab department of the E. R. Thomas Motor Co. has been in Washington perfecting arrangements for the establishment of the service there. The name of the company, it is stated, will be either the Washington Taxicab Co., or the Thomas Taxicab Co.

FIGHT AGAINST THE WHEEL TAX

Chicago's New Ordinance to be Attacked as Unconstitutional—Chief Weapon a Former Court Decision.

Injunction proceedings will be instituted at once against the city of Chicago by the Chicago Motor Club to prevent the municipal authorities from carrying out the provisions of the wheel tax ordinance, passed by the city council last week. The club's attorney is preparing the papers for the fight. All the automobiling organizations of Chicago are united in contesting the new ordinance which, it is asserted, is directly contrary to decisions of the Supreme Court of Illinois.

The wheel tax ordinance passed by the Chicago council, provides that the following license fees be paid yearly by all vehicles using the streets of Chicago:

One-horse wagon or vehicle	$5
Two-horse wagon or vehicle	10
Three-horse wagon or vehicle	15
Four-horse wagon or vehicle	25
Six or more horse wagon or vehicle	35
Automobiles with seats for two persons.	12
Automobiles with seats for more than two persons, exclusive of trucks, coaches and buses	20
Automobile trucks, coaches and buses	30

In its assault upon the constitutionality of the wheel tax ordinance the Chicago Motor Club will use as its chief weapon the decision of the State Supreme Court in the case of the City of Chicago vs. Collins, several years ago, when an attempt was made to tax bicycles. The Supreme Court ruled that the use of the streets is not a provilege of the citizen, but his alienable right, which no municipality has a right to tax.

In view of its bearing on the present case the following excerpt from the Supreme Court's decision in the Collins case is not untimely:

"The right of the public to use the streets is the right to use them for purposes of travel in the recognized methods in which the public highways of the State are used. Any method of travel may be adopted by individual members of the public which is an ordinary method of locomotion, or even an extraordinary method, if it is not, of itself, calculated to prevent a reasonably safe use of the streets by others. If a right exists in a city council to impose a license fee, by way of tax, upon every person using wheeled vehicles thereon, it may, in like manner, impose such license fee for such use of the streets in every other manner of locomotion or travel and reach the man on horseback or the pedestrian walking along the same. . . . . Anything which cannot be enjoyed without legal authority would be a mere privilege, which is generally evidenced by a license. The use of the public streets of a city is not a privilege but a right. A license, therefore, implying a privilege, cannot possibly exist with reference to something which is right, free and open to all, as in the right of a citizen to ride and drive over the streets of the city without charge, and without toll, provided he does so in a reasonable manner."

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The Week's Patents.

872,808. Shock Absorbing Device for Vehicles. Claud H. Foster, Cleveland, Ohio. Filed Dec. 14, 1905. Serial No. 291,704.

1. The combination, with the body and axle of a vehicle, of a dashpot comprising a cylinder supported by the axle and a piston therein, a rod for said piston having at its upper end a bracket, a pin carried by said bracket and a plate or member carried by said body and provided with a slot for the reception of said pin, said slot being elongated longitudinally of the vehicle, substantially as specified.

872,836. Vehicle Wheel. Tod J. Mell, Youngstown, Ohio, assignor to The Republis Rubber Company, Youngstown, Ohio, a Corporation of Ohio. Filed May 17, 1906. Serial No. 317,369.

1. In a circumferentially divided wheel rim, the combination with separable sections, of a spring locking ring having cooperating inclined faces for drawing and securing said sections together, substantially as described.

872,860. Vehicle Tire. William C. Taylor, Paris, France, assignor of one-half to Clarence G. Taylor, Washington, D. C. Filed Feb. 20, 1907. Serial No. 358,431.

1. In combination with a rim; a plate carried thereby, said plate being provided with numerous perforations throughout its length and breadth; a pneumatic tire mounted upon the rim over said perforate plate; and means for admitting air to the opposite side of the plate.

872,877. Vehicle. Zephaniah E. Williamson, Sheffield, Ill. Filed May 9, 1907. Serial No. 372,693.

A vehicle of the class described having a frame projecting from the front end of its body and provided with a transversely disposed guide-way, a tongue pivotally connected to an axle of the vehicle and bearing and disposed to travel in said guideway, a steering shaft mounted in the body of the vehicle, having a steering wheel at its upper end and a sprocket wheel at its lower end, direction sprocket wheels mounted in the said frame at points at opposite sides thereof, and a sprocket chain engaging and connecting the sprocket wheels, the sprocket wheel at the lower end of the steering shaft and also connected to the tongue to move the latter in the guide way, for the purpose set forth.

872,881. Drive Mechanism for Motor Vehicles. Adam Ziska, Jr., Chicago. Ill., assignor to Rockford Automobile & Engine Co., Rockford, Ill. Filed Nov. 24, 1906. Serial No. 344,936.

1. In a motor vehicle, the combination of a motor operated drive wheel having a friction face, a pulley having a peripheral friction surface, a shaft on which the pulley is mounted operatively connected to the pulley, means for adjusting the shaft to vary the line of engagement of the friction surfaces of the drive wheel and pulley and means for adjusting the pulley to engage the face of the drive wheel at different points along said line to vary the speed of the pulley.

872,952. Variable Speed and Reversing Gear. Franz Markgraf, New York, N. Y. Original application filed Feb. 11, 1903. Serial No. 142,974. Divided and this application filed Dec. 15, 1904. Serial No. 236,950.

1. In a variable speed mechanism, in combination, a shaft, a plurality of gears of varying diameters fixed thereon, a second shaft, a plurality of gears slidably mounted thereon and adapted to mesh with said first mentioned gears, means adapted positively to throw said second mentioned gears into mesh with said first mentioned gears and to throw some of the gears out of mesh without breaking connection between all the gears, a lever controlling said means, and cushioning means interposed between said throwing means and said lever.

872,999. Power Transmitting Mechanism. Gittfried Malburg, Cleveland, Ohio, assignor of three-fourths to A. A. Maresh, R. J. MacKenzie, Theo Hanks, Frank McHale, and Fred Matthews, Cleveland, Ohio. Filed Dec. 24, 1904. Serial No. 238,204.

Power transmitting mechanism comprising the combination of a frame, an engine mounted on said frame, a gear wheel secured on the engine shaft, a shaft arranged at a right angle to the engine shaft, a gear wheel mounted on said last mentioned shaft and arranged to mesh with the gear wheel on the engine shaft, two wheels rigidly secured on said last mentioned shaft, boxes rotatably mounted on said wheels, levers fulcrumed in said frame and having their ends extending into and arranged to slide freely in the respective boxes, sleeves arranged on the opposite ends of said levers, means for sliding said sleeves in and out on same, means for locking said sleeves in their adjusted positions, a driving shaft, drums mounted on said driving shaft, a cable connecting each drum with one of said levers so that the movement of said levers in one direction will cause a rotary movement of said drums in one direction, automatically operating clutches arranged to lock said drums to said driving shaft when said drums are rotated by the movements of said levers, and springs for rotating said drums in the opposite direction to that in which they were rotated by said levers, substantially as described and for the purpose set forth.

873,016. Pneumatic and Solid Tire for Vehicle Wheels. James Burnham, London, England. Filed Jan. 28, 1907. Serial No. 354,563.

1. The combination of a wheel, a band on the exterior thereof having side flanges of unequal height, one of said flanges being notched and the other slotted, of a tire rim carrying a tire and provided with internal projections of substantially the same size as said notches, and wedges fitting in said notches, substantially as described.

873,047. Automobile Wind Shield. Stephen D. Hunter, Philadelphia, Pa. Filed July 11, 1907. Serial No. 383,272.

1. A wind shield for automobiles comprising a two part frame and two pairs of tubes between which the frames are respectively supported, plugs secured within the tubes of the lower frame and provided with threaded sockets having conical outer seats, and pins extending through the tubes of the upper frame, said pins having contracted threaded ends and tapered shoulders at the junction of their bodies and said contracted threaded ends, said contracted threaded ends and tapered shoulders being adapted to respectively engage the threaded orifices and conical seats in said plugs substantially as described.

873,092. Coupling Rod for the Axles of Automobiles. Theodore Rommel, Neuilly-sur-Seine, France. Filed Sept. 6, 1906. Serial No. 333,458.

1. The combination with a vehicle frame and wheel axle of a coupling or tension rod adjustable as to length and having a non-displacable connection at one end to said frame, and a spring connection between the other end of said rod and the wheel axle aforesaid substantially as described.

873,102. Clutch. William W. Sly, Cleveland, Ohio. Filed June 21, 1907. Serial No. 380,070.

1. The combination of a shaft, a rotative member thereon having an annular flange, a clutch lever supported on the shaft and having a pivot head with a slot therein through which the flange extends, and means to operate the lever to bind the flange in the slot.

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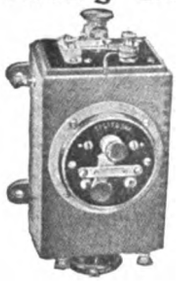
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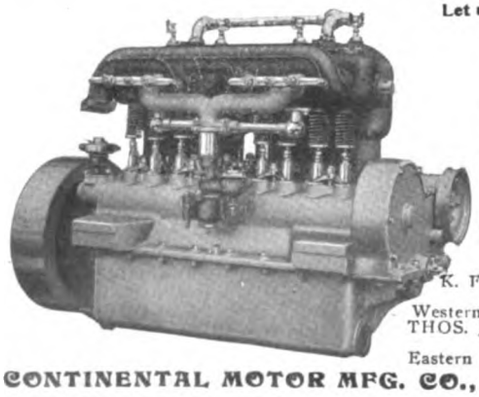
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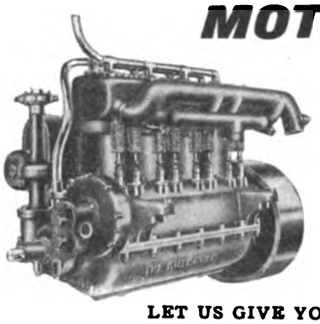
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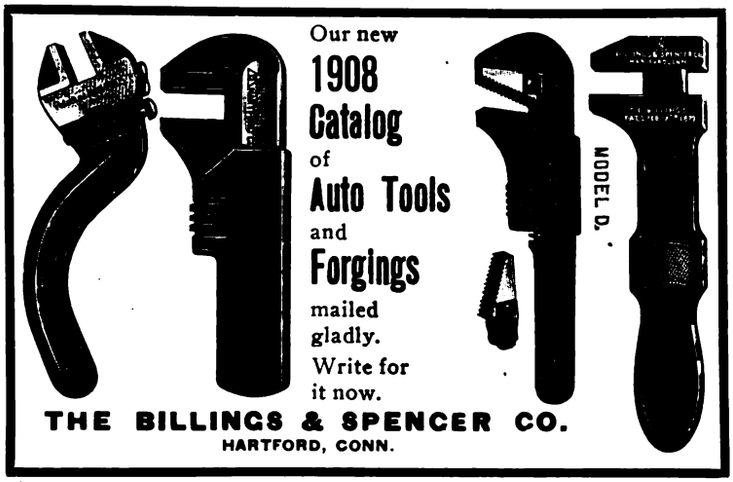
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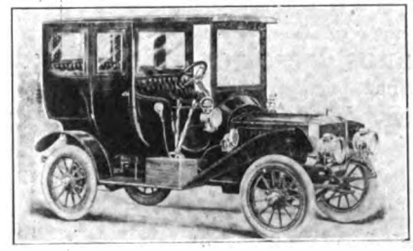
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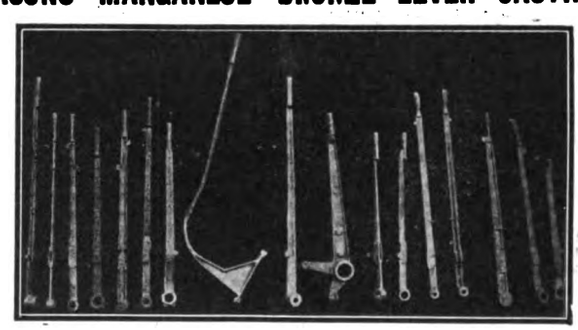
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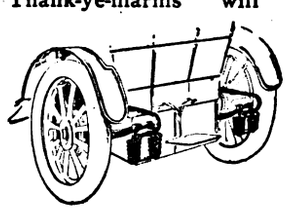


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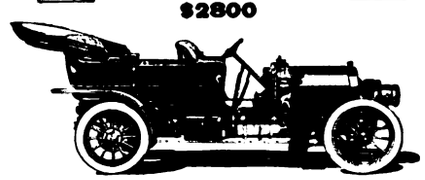
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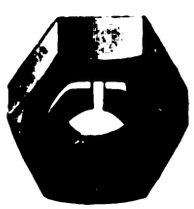
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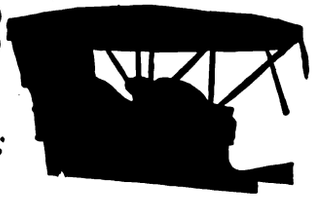


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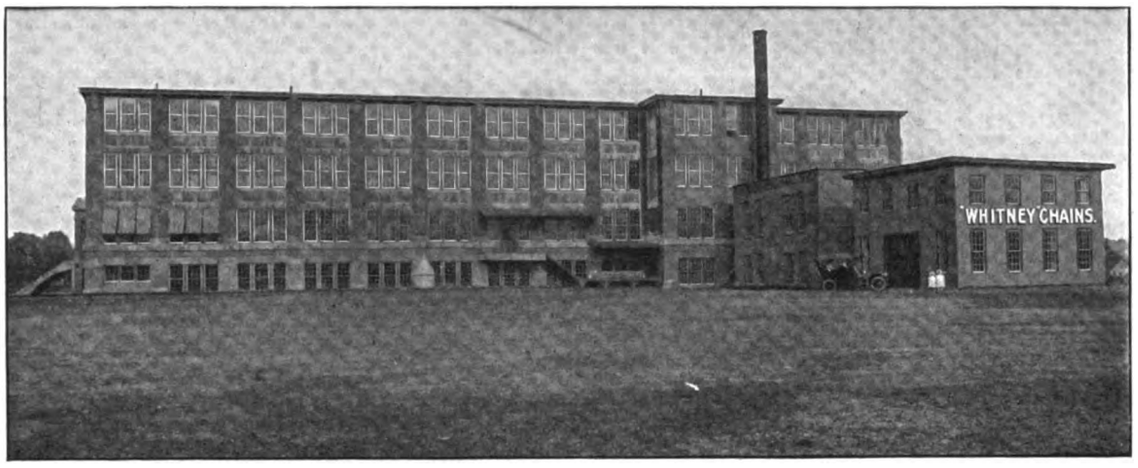
The Motor World

for one year, commencing with the issue of_____

Name_____

Address_____

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We are now well settled in our

New Factory and

READY TO SHOW RESULTS

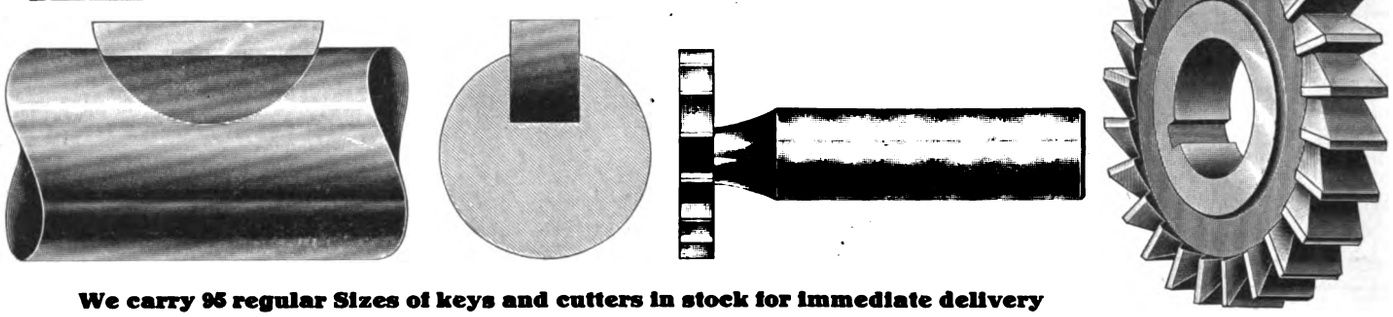
Prompt Delivery and Constant Improvement in Quality

In our effort to possess the Finest Chain Plant in existence and to maintain the highest degree of Accuracy, Efficiency and Finish we are going to the very limit.

We will now make all sizes of Rolier and Bushing Chains for which there is a reasonable demand.

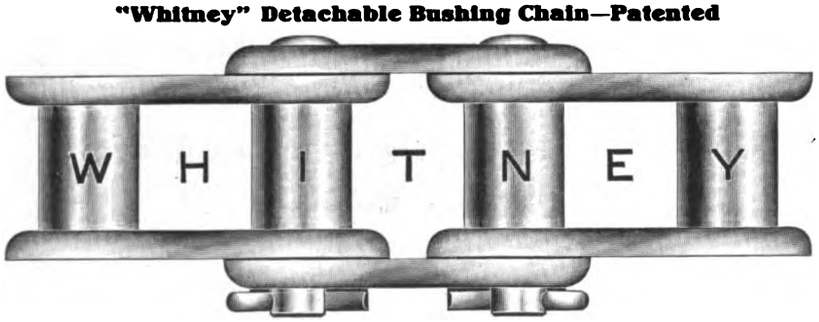


"WHITNEY" MACHINE KEYS and KEY SEAT CUTTERS
(For the Woodruff Patent System of Keying)



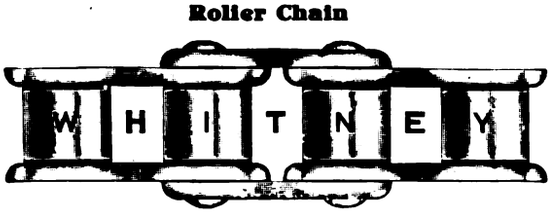
We carry 95 regular Sizes of keys and cutters in stock for immediate delivery

"Whitney" Detachable Bushing Chain—Patented



Bushing Chains are like Rolier Chains—Without Rolls

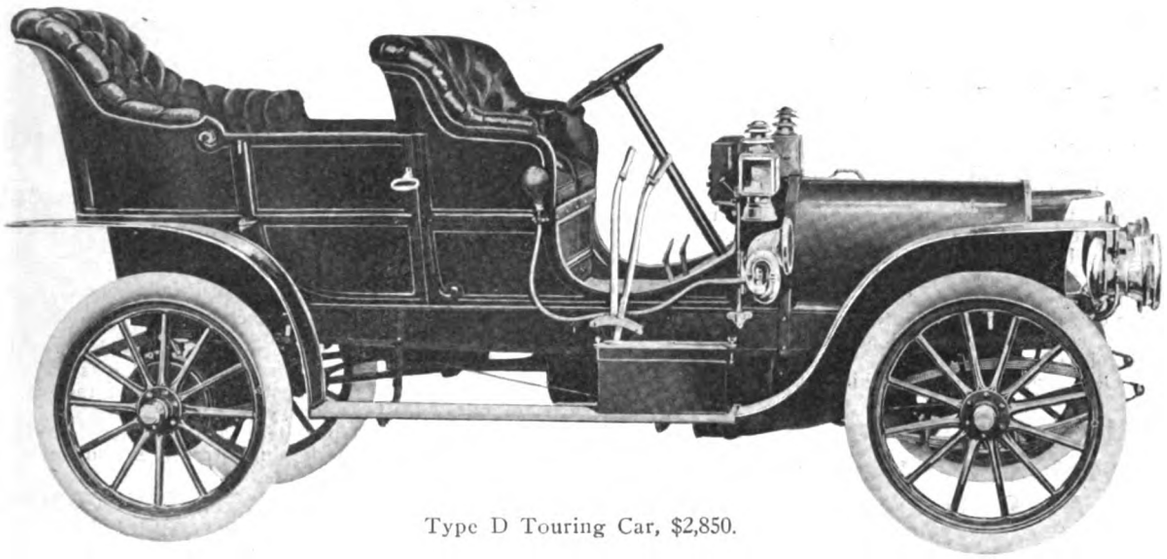
Rolier Chain



The Whitney Mfg. Co.
Hartford, Conn.

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FRANKLIN



Type D Touring Car, $2,850.

You want your motor-car for keeps.

You want it to go on giving good service year after year. You don't want to find yourself next year with an over-weighted expense-breeding relic on your hands.

You want an automobile so well built that a season's use will only make it run smoother and easier; so far advanced that time will only bring other makes nearer to it in design; so graceful an modish that in spite of changing fads it will still be smart and in good form.

Over 5,000 Franklins are in active use—many of them 5 years old. The first Franklin ever made is still giving good service. How many 5-year-old automobiles of other makes do you see in use to-day?

Demonstrations by appointment. Any Franklin dealer will gladly show you. An hour's ride will tell you more than we could describe in 100 pages.

H. H. FRANKLIN MFG. CO., Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers.

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SPRINGS

CLEVELAND-CANTON

Vanadium Anti-Fatigue

alloy steel gives the maximum of elasticity, tensile strength and stands up under continuous shocks and stress reversals far in excess of anything yet discovered. Where drastic conditions are encountered, there Vanadium is at its best.

Automobile Springs

that will not permanently set, that are resilient and will carry on overload without breakage are not easy to find. We make them. The fitting is done by a patented high-pressure roller used exclusively by us, and every spring is carefully tested in powerful machines before leaving the factory. We believe we can be of assistance to every automobile builder in working out the "spring problem."

Our services for the asking.

Cleveland-Canton Spring Co.
1429 Dueber Avenue
CANTON, OHIO

CLEVELAND-CANTON

SPRINGS



A Car On Crutches!

A Car limping there—and limping back, has but one thing the matter with it—a lame, crippled Ignition System.

The Battery Witherbee Means Perfect Ignition

Means new life to your car; means less cost for "up-keep." Get there and back without the limp. Equip your Car with the Witherbee and throw away your crutches.

The consistent performance of the battery Witherbee, has so standardized this product that it is included as part equipment on the greater majority of motor cars manufactured in this country.

In writing Department 20 for battery catalogue please request Wico Spark plug literature and mention Motor World.

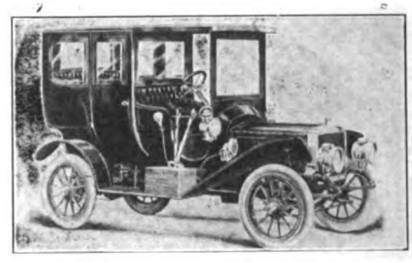
WITHERBEE IGNITER COMPANY
THREE FACTORIES.
New York, 541 West 43d St. Chicago, 1429 Michigan Ave. Detroit, 220 Jefferson Ave.
Baltimore Office: 510 Continental Trust Building.

Triumph Grease, What Is It?

¶It is the newest production of auto grease, and benefitting by the experience of other makers, we have produced the best one yet. ¶We do not imitate any one, nor follow any other maker's plans. Our grease is spongy when made—it is spongy all the time, but it does not melt or run out. ¶It never gets hard or stiff so that it will not do its work properly—no matter how cold the weather is. It is made of the purest and best lubricants to be found, and compounded in such a manner as to produce what the auto user has long wanted. ¶A grease that will lubricate from start to finish, and will last long enough to pay for the trouble of putting it in the machine, and then staying right there like a good clerk attending to its own business constantly, and does not need punching up and renewing every few days, and leaves the machine clean and not all grease when through using it. ¶It is the red thorn in the side of the old fogy grease, or the non-fluid oil makers. It is always RED. No other grease like it, and it is not like any other grease. So we are not imitators in any sense of the word. ¶Buy it, and try it, and if not all we claim for it, any dealer will refund all expense it has been to you.

The Perfection Grease Company, South Bend, Ind.

AUTOMOBILE BODIES

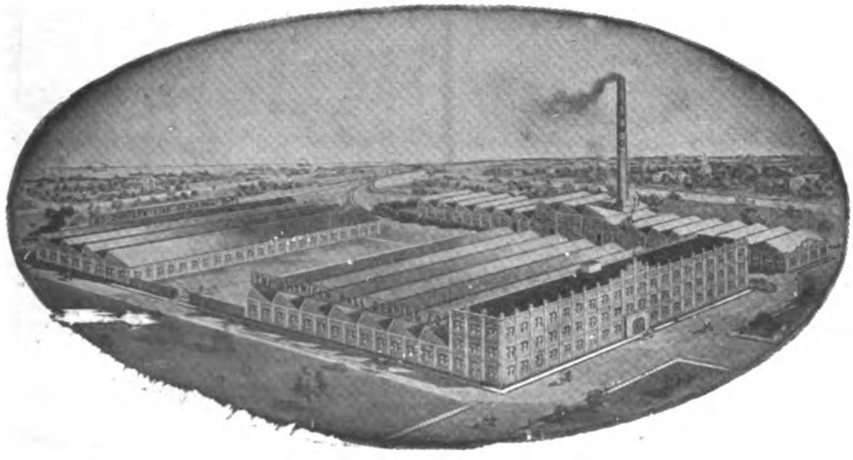


TWO FACTORIES

Large Contracts for entire outputs. Specially equipped for Limousine and all other high-class enclosed work.

Output for this season, 9,000 jobs, complete, trimmed and finished

RACINE NOVELTY MFG. COMPANY, Racine, Wis.



The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

L. S. & M. S. Ry. & Edgwater Park

CLEVELAND, OHIO, U.S.A.

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$3,000 to $5,000 for an Automobile? You Don't Get Your Money's Worth

You don't because to-day most automobile **values** bear the same relation to automobile **prices** that **bicycle** values and prices bore to each other **twelve years ago.**

You paid $125 for a good wheel **then.** To-day you can buy a **better** one for 60 per **cent. less.**

Before you pay $3,000 to $5,000 for an **automobile,** find out what sort of a car the **Mitchell is at $2,000.**

Don't take it for granted that $2,000 **can't** buy as good automobile value.

Prove that it **can.** Put **higher** prices on the **defensive.** Do it this way—

Try the Mitchell—any agent anywhere will be **glad** to "show you" a combination of style, finish, construction and performance in the Mitchell new models, the superior of which hasn't been "shown" in any car made to-day regardless of price.

He'll send a car around any time you say and show you a **silent argument** that will instantly appeal to your business judgment and **convince** you—a silent argument the equal of which no **salesman** ever will be capable.

Isn't saving $1,000 or $3,000 on an automobile which **proves** itself right **worth considering,** Mr. Business Man?

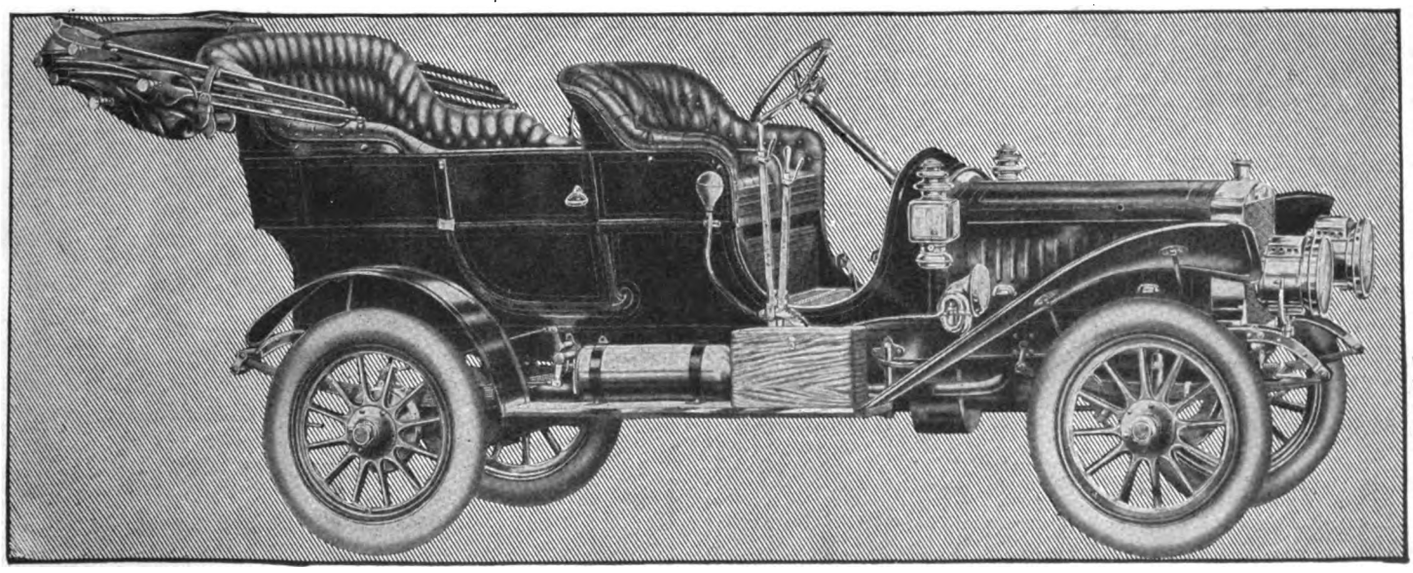
You simply telephone any Mitchell agent that you are interested (no obligation on your part) and want a demonstration.

Think it over, Mr. Business Man. Do you know a single, good, business-like reason **why** you should pay more than $2,000 for an automobile? Prove that there **isn't** any by writing us or the nearest agent for names of many satisfied users of the Mitchell who have driven their cars thousands of miles over all kinds of roads and hills, and have encountered every known road test that makes or breaks a car. Let them tell you facts in their **every-day experience** which proves the Mitchell to be the most economical car to **keep** as **well** as to buy.

Write for Catalog No. 18.

MITCHELL MOTOR CAR CO., 279 Mitchell Street, RACINE, WIS.

Member American Motor Car Manufacturers' Association.



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One Price for Warner Auto-Meters

NEVER, until this year of 1908, has there been a speed indicator sold at one absolutely fixed list price. Manufacturers have "named" a list price and some even required the dealers to sell at "that" price.

Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also — and the jobber cut the price.

Then there was fun in the camp. That hurt us — it hurt the dealer, too.

Then, in his haste to close a sale, the jobber would let wrong gear ratios go out — that hurt the consumer, the dealer and ourselves. For the jobber knows no law.



So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

THIS STAND IS POSITIVE.

Warner Instrument Co.
125 Wheeler Ave., Beloit, Wis.

MORGAN & WRIGHT TIRES

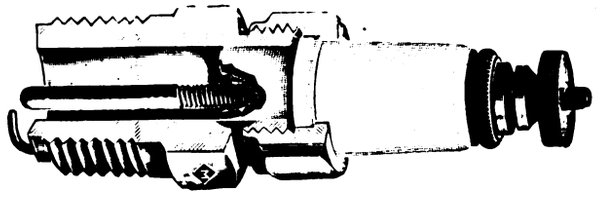
keep down your repair bills

MORGAN & WRIGHT
DETROIT

Branches, Agencies or Dealers Everywhere

The Largest Automobile Supply House in America

The Miller
Porcelain Spark Plug



There has been a constant demand for a first-class porcelain plug and we have arranged to manufacture this plug in large quantities and in this way we have reduced the cost of manufacturing the plug, and we offer one of the best spark plugs on the market at a low price. The material and workmanship are the finest on the market and are guaranteed. The list price is $1.00 each.

Our catalog—the largest of its kind, mailed on request

CHAS. E. MILLER
Manufacturer, Jobber, Exporter and Importer

HOME OFFICE:
97-99-101 Reade St., New York City

New York City, 924 Eighth Ave.
Philadelphia, 318-320 N. Broad St.
Cleveland, Ohio, 1829 Euclid Ave.
Boston, Mass., 202-204 Columbus Ave.
Detroit, Mich., 227½-229 Jefferson Av.
Buffalo, N. Y., 824 Main St.

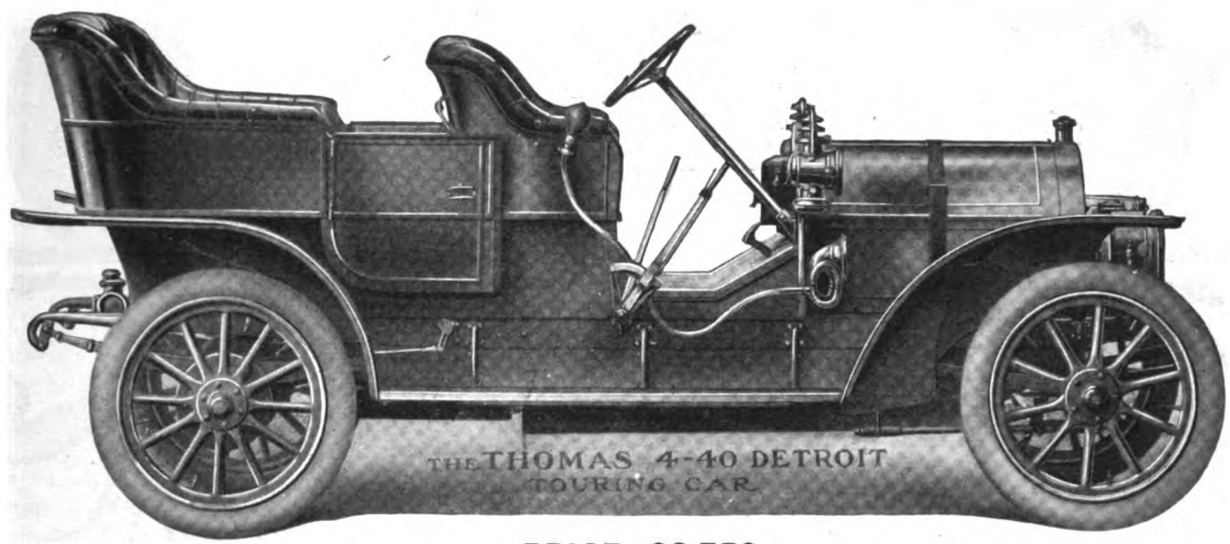
THE BEST WAY TO FIND A GOOD THING IS TO LOOK FOR IT × WE HAVE A FIND IN THE AURORA RUNABOUT AT $700 AND $775. WILL YOU LOOK?

AURORA MOTOR WORKS
AURORA - ILL -

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THOMAS 1908

A complete line of Motor Cars of the highest quality possible in Design, Material and Workmanship. They will do what you wish your car could do . . . .



PRICE, $2,750

Thomas 4-20 Towncar

The original Towncar, designed for City and Suburban use exclusively. Beautiful bodies, quiet operation; low cost of maintenance. The Society Car.

Thomas 4-60 Flyer

Winner of hundreds of contests of speed, hill-climbing, reliability, and endurance. Has more records than any American car. This year improved, enlarged, and refined.

Thomas 4-40 Detroit

Best of all shaft-drive cars. In power, speed, hill-climbing, and reliability the Thomas Detroit leads the five passenger class.

Thomas 6-70 Special

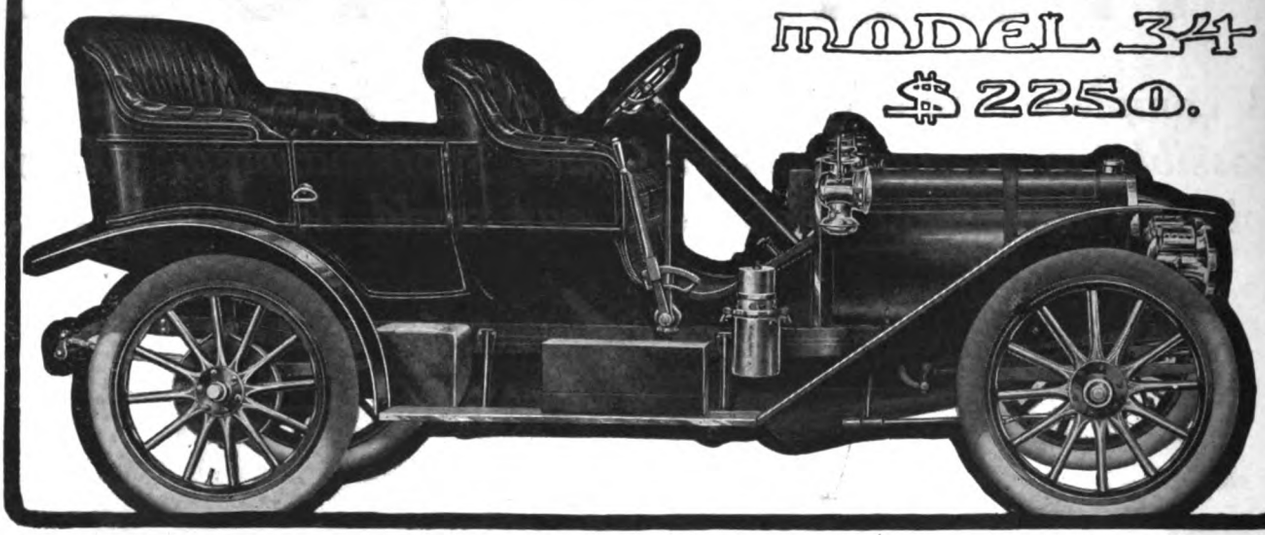
The six-cylinder model of the Thomas Flyer, built by America's pioneer six-cylinder builders. The greatest car in America in speed, size, reliability and refinement.

Thomas Cars Succeed

E. R. THOMAS MOTOR COMPANY

Member A. L. A. M. ***Buffalo.***

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Rambler

The Car of Steady Service

As a matter of business judgment examine the mechanical features of this car, such as offset crank shaft, straight line drive, direct from transmission gear to rear axle without an intervening joint, ball or roller bearings throughout the transmitting system, and powerful axle construction and other important details.

Then compare this car at $2,250 with any other car at any price, and be guided by the keen consideration that you would give any other investment of equal moment.

It is quality that counts and we offer all the practical value obtainable at any price.

Let us show you; it may save you hundreds of dollars both in first investment and cost of maintenance.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies

Chicago Milwaukee Boston Philadelphia San Francisco

Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, February 20, 1908. No. 21

BUDLONG TO GO WITH PACKARD

Resignation as General Manager of the A. L. A. M. a Trade Surprise—His Successor not yet Named.

The fact that Milton J. Budlong, general manager of the Association of Licensed Automobile Manufacturers, has resigned that office to accept the assistant general management of the Packard Motor Car Co., Detroit, was made known early this week.

As it was known only to a limited few that Mr. Budlong even contemplated such a move, the news proved in the nature of a trade sensation, although a visit he made last week to Detroit furnished an inkling of it. The exact date when Budlong will take up his new duties is not fixed, as he will remain with the A. L. A. M. until his successor is chosen and well established in office. No one yet has been suggested to succeed him.

Although his change will excite general surprise, it is known that the Packard principals were negotiating with Budlong soon after his return from Europe last Fall, and that when he accepted the management of the A. L. A. M. in November, it was due to urgent solicitation and that to his acceptance were attached conditions that he should remain long enough to effect certain internal reforms and thereafter be free to go elsewhere, his personal inclinations being for effort in the manufacturing field in which he had spent the best years of his life. He since has had at least three unusually handsome proposals of the sort made to him and having accomplished the ends he sought to serve for the A. L. A. M., he has accepted the Packard proposal, which will make him the right hand man of Henry B. Joy, the managing head of the Packard company, who seeks to lighten his cares.

Previous to his engagement with the Association of Licensed Automobile Manufacturers, Mr. Budlong was president of the Electric Vehicle Co., and as the representative of that company he served as a member of the A. L. A. M. executive committee and president of the National Association of Automobile Manufacturers.

Credit Association in Annual Session.

At the annual meeting of the Automobile Trade Credit Association, held at the offices of its secretary and attorney, Franz Neilson, 80 Wall street, New York, all of the old officers were re-elected, as follows: President, W. B. Lasher, Weed Chain Tire Grip Co.; vice-president, Carl Kaufman; treasurer, M. J. Martin, George Haws Co.; secretary, Franz Neilson. These gentlemen, with E. S. Fretz, Light Mfg. & Foundry Co.; George L. Holmes, Jones Speedometer Co.; F. S. Wilson, Trenton Rubber Mfg. Co., and H. B. Mirick, National Electric Supply Co., constitute the board of directors. During last year it was reported that the association had been able to collect 75 per cent. of the old and doubtful accounts of its members. The total number of accounts handled was 863, of which 805 were collected, the total amount being $75,341, of which $56,801 was collected.

Witherbee to Establish Branch Houses.

The Witherbee Igniter Co., manufacturers of Witherbee batteries and Wico specialties, have just established a branch office at 720 Main street, Buffalo, N. Y. It will be under the management of James Barkley. A. J. Fisk, general manager of the Witherbee company, is now on an extended trip through the West, during which arrangements will be made for the establishment of a complete chain of branches.

Overland Issues More Stock.

The Overland Automobile Co., of Indianapolis, which emerged from its embarrassment by a semi-reorganization with J. N. Willys, its former Eastern agent, as president, has certified to an issue of $25,000 preferred stock. P. D. Stubbs appears as secretary of the company.

ELECTRIC VEHICLE AT STANDSTILL

No One Found Willing to Undertake Reorganization—Factory Closed, with no Prospect of Early Opening.

All prospects of an early reorganization of the Electric Vehicle Co., Hartford, Conn., have vanished. It is understood that efforts were made to induce two well known men to undertake the task, but in each instance the men refused and the last prospect of any further steps in that direction were dissipated this week when J. B. Entz, vice-president and chief engineer of the company, and E. C. Steinmetz, superintendent of the factory, were released. A few clerks and repairmen are still at work, but to all practical intents and purposes the plant is closed, and it is expected that the branch stores of the company also will be discontinued. In Hartford it is freely reported that there are small prospects of the stagnation being overcome until after the presidential election next Fall.

Henry W. Nuckols, one of the receivers of the company, stated that the practical suspension of operations is due to the improbability of immediate reorganization coupled with the fact that now there is no money coming in.

The receivers' report, filed in court, shows that at the end of January they had $21,951.44 in hand. Their expenditures during the month were $16,226.50. They collected $38,177.94 during January and paid out $16,226.50. They had $10,619 in hand on January 1, 1908.

The temporary receivers for the Electric Vehicle Co. were appointed on December 10, for four months. While this term expires on April 10, Mr. Nuckols does not believe that the court will at that time require a forced sale of the property, but will continue the receivership another four months.

There is a bare possibility, Mr. Nuckols

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said, that the bondholders might bid for the property if it is put up at auction sale, but he added that he had had no such assurances. He did not believe, however, that the court would order a sale under present financial conditions, as the property would have to go at a great sacrifice, with a corresponding loss to the creditors.

Franklin Re-elects Old Officials.

Indications of improvement in business conditions is shown in the reports presented at the recent annual meeting of the H. H. Franklin Mfg. Co., Syracuse. In speaking of the year's business, H. H. Franklin, president of the company, said that the company sold its first car in June, 1902, and the total business for that year amounted to $122,000, while in 1907 the sales ran to nearly $4,000,000. In spite of the financial stringency orders kept up very well during November and December of last year. From January 1st to the 15th business was dull, but during the week of January 15 to January,21, 29 per cent. more orders were received than during the previous two weeks.

The following directors were elected by the stockholders to succeed themselves: H. H. Franklin, A. T. Brown, W. C. Lipe, E. H. Dann, G. H. Stilwell, John Wilkinson, and F. A. Barton. After the stockholders meeting the directors re-elected the following officers: President, H. H. Franklin; vice-president, G. H. Stilwell; secretary, F. A. Barton; treasurer, H. B. Webb. In the evening the stockholders of the company were entertained by Mr. Franklin at the Century Club.

Foreign Makers Turning to Air Ships.

From motor cars to flying machines is a far cry, it would appear, but it is not too far for some of the French automobile makers who are beginning to feel the effects of the popular revulsion from the craze for high priced machines, which has been the leading feature of the Gallic market for several years. Leon Bollée, one of the oldest motor car builders in the country, is reported to be engaged in the construction of a flying machine at Le Mans, and the Clement-Bayard Co., are reputed to be engaged in a similar undertaking at the instigation of a Russian enthusiast. It will be remembered that these firms stepped into the automobile business from the ranks of the bicycle industry at the time when trade depression was affecting the Continental cycle market.

Can't Sue Avery's Customers.

The United States Court of Appeals, at Chicago, has entered a decree sustaining the order of the lower court, which restrains the Commercial Acetylene Co. of New York from bringing suits against agents, customers, or users of automobile lighting equipment sold by the Avery Portable Lighting Co. of Milwaukee. The Commercial company claims that the Avery gas tank infringe their rights.

In the Retail World.

The Hibbard Automobile Co., Milwaukee, Wis., has dissolved.

Monterey, Cal., is to have a garage. Arthur Winston has purchased a lot on Main street, opposite Rodrick Park, and will erect a large reinforced concrete garage.

E. S. White and Linn B. De Bell have formed a copartnership and will open a garage in Adrian, Mich. The property at Church and Maumee streets has been purchased for the purpose.

The Wheeling Automobile Co., which has conducted a garage at Sixteenth and Eoff streets, Wheeling, W. Va., has been petitioned into bankruptcy. W. E. Weiss and others are the petitioners.

York—Nebraska, not Pennsylvania—now feels entitled to take rank with the "metropolusses" of the world. The York Automobile Co., the first garage in town, opened in the new Farmers' Exchange building last week.

Defective electric wires caused a lively blaze for a time in the three-story wooden garage of Walter O. Faulkner, Lynn, Mass., on Tuesday last, 11th inst. The only damage was to machinery, amounting to a little more than $1,000.

The Owensboro Automobile Co., which conducted a garage and repair shop at Owensboro, Ky., has gone out of business. Concurrently, a number of people are looking for W. R. Williams, the proprietor, who is said to have suddenly departed for Texas.

Howard Morley and Albert Marksheffel have organized the Colorado Automobile & Supply Co., and have opened a garage at 8-10 East Bijou street, Colorado Springs, Col. The company will handle the Ford car, and has announced that it will organize a supply club by which members may secure supplies at actual cost.

The Week's Corporations.

Ossining, N. Y.—Ossining Garage Co., under New York laws, with $5,000 capital. Corporators—G. Howard Wallace, Samuel J. McCord, and Thomas E. Wilson, Peekskill, N. Y.

Chicago, Ill.—Co-operative Engineering Works, under Illinois laws, with $10,000 capital, to manufacture automobiles and supplies. Corporators—F. W. Ritchie, J. Smalley and G. E. Schmidt.

New York City, N. Y.—Stepney Spare Wheel Agency, under New York laws, with $4,000 capital. Corporators—John C. Riley, Chicago; Stephen A. McMahon, Belleclaire Hotel, and L. Walter Lissberger, 135 East Ninety-second street, New York City.

Kittery, Me.—Ball Bearing Tire Co., under Maine laws, with $7,000 capital; to manufacture and deal in automobile tires. Corporators—Edward N. Cook, Providence, R. I., president; Ira F. Peck, Auburn, R. I., treasurer.

Yonkers, N. Y.—Rose & Thomson, under New York laws, with $10,000 capital, to carry on automobile business and conduct a garage. Corporators—Arthur S. Thomson, New York City, N. Y.; Herbert Rose and Louis F. Marran, Yonkers, N. Y.

Larchmont, N. Y.—Holbrook-Singer Co., under New York laws, with $15,000 capital; to manufacture automobiles, etc. Corporators—Henry F. Holbrook, 58 West Fifty-ninth street, New York City; Charles A. Singer, Jr., and David J. Levett, Larchmont, N. Y.

Jury Gives Verdict Against Vanderbilt.

Francois Richard, a Frenchman, who built a racing automobile for Alfred Gwynne Vanderbilt, the only fault of which was that it would not run, secured a verdict of $1,250 against his former employer, by a jury in the Supreme Court, New York City, this week. Richard had sued for $5,000, which he claimed was the balance due from Vanderbilt for constructing the vehicle. It was brought out in the suit that Vanderbilt had employed Richard to build a car that would break all existing speed records, agreeing to pay him a salary of $5,000 a year, in addition to the cost of materials employed in the construction of the car.

The car, rated at 200 horsepower, was built and taken to the Florida beach carnival in 1906, but it did not break any records; in fact, it could not be persuaded to move under its own power for any distance. Some of Richard's expense items were rather high and Mr. Vanderbilt would not pay them, when Richard sued for $5,000, the unpaid balance of $19,000, the cost of the machine. In court it was brought out that Richard charged $1,300 for a crank shaft that cost him $600, and that in his bill was an item of $1,400 for expenses at Florida, during the racing week. Richard explained that he met a "very many Frenchmen in Florida." The jury was locked up many hours before returning a sealed verdict in favor of the plaintiff for $1,250.

Breaks Away from Horsepower Rating.

While automobile manufacturers have discussed the subject, it has remained for a maker of motorcycles to break away from the slavish, elastic and too often meaningless term "horsepower." The makers in question, the Hendee Mfg. Co., Springfield, Mass., who produce the famous Indian motorcycles, have announced that henceforth they will employ piston displacement instead of horsepower in rating of their engines, and emphasize their statement by so designating the power of their several models in their 1908 catalog.

Rushmore Obtains Another Injunction.

The Rushmore Dynamo Works have obtained a preliminary injunction, restraining the Motor Car Equipment Co., New York, from using the words "Flare front" or the name Rushmore, and from the manufacture and sale of lamps in imitation of the Rushmore product.

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ODD SETTLEMENT OF SHOW SNARL

Trouble Caused by San Francisco Women's Project is Eased—"Ins" are In; "Outs" Must Stay Out.

Although the Automobile Dealers' Association of California at its last meeting refused to sanction the proposed show of the California Woman's Automobile Club, as it was expected would be the case, the show promoting ladies are not the least bit worried and will conduct the exhibition as planned. It is advertised to take place in the Coliseum, during the week March 8 to 8.

As told in last week's Motor World, the trade association, by a majority vote, sometime ago decided that it would not be to the general interests of the dealers to hold a show this year. The dealers that did think it to their interests to hold a show were considerably put out by the decision of the association, and when the feminine motorists came forward with a project to hold a show under the auspices of their club, the idea was hailed with delight and many of the dealers promised to support it

When it was announced that the women would apply to the trade association for a sanction for their show and that the question would come up for discussion and action at the last meeting it was predicted there would be "tall doings." Unusual would better describe the action taken.

After a great deal of discussion and lively argument it was decided to not grant the sanction to the California Woman's Automobile Club. This action was followed by the adoption of a rule which considers all shows not sanctioned by the association as outlaw events. At first the rule, as proposed, was most drastic. It would have prohibited those who took part in such events from taking part in all future contests and shows, and for a time it looked as though there would be a split in the association. The rules were amended, however, to allow those dealers who already had taken space in the proposed woman's show to take part in that one only and to "be good" in future. It also prevents any more dealers signing to exhibit at the show, giving power to the directors of the trade association to penalize them according to their discretion. The situation is very much muddled. Those dealers who did not purchase space to exhibit now are barred, while those who ignored the dealers' association's previous action and said that they would show whether a sanction was given or not, have been granted immunity, and will be able to display cars at the show. There are those who rightly think that it is a poor rule that won't work both ways.

The California Woman's Automobile Club issued a prospectus this week which indicates that most of the spaces have been taken. The cars which will be shown are the Dragon, National, Jackson, Renault, Aerocar, Stearns, Tourist, Locomobile, Matheson, Winton, Elmore, Stevens-Duryea, Woods, Maxwell, Acme, Overland, Marion, Glide, Gale, Auburn, Chadwick, and Frayer-Miller.

Why Budlong is not Wholly Happy.

Milton J. Budlong is one of the incorporators of the Leakless Motor Tube Co., which was this week incorporated under New York laws, with $60,000 capital. Budlong was not aware of the honor that had been thrust upon him until friends informed him of the fact, and then he was not wholly happy. It appears that when he was abroad last Fall and before he became general manager of the Association of Licensed Automobile Manufacturers, an English acquaintance informed him of his intention of forming an American company to market the "Sure Seal Compound" on this side of the pond and asked if Budlong would permit the use of his name in forwarding the project. Budlong proved agreeable, but that he would figure as one of the organizers of the company never entered his mind, hence his present discomfiture, which is made keener because his British friend who came to America, has just sailed for home, thus partly closing Budlong's relief valve. Edmund S. Hopkins and Dr. Ottey Miller are named as the other corporators of the Leakless company. Budlong, however, does not consider himself a corporator, as he signed no papers and had nothing whatever to do with the matter.

Wagner Leaves the "Motor Age."

As a result of its acquirement of the Chicago Motor Age by the owners of the New York Automobile, Fred J. Wagner, the general advertising representative of the Chicago publication, has been released. Wagner is one of the best known men in his field, his connection with the Motor Age dating back nearly 20 years and from the period when that publication was first The Bearings and later the Cycle Age.

Mitchell Rental Service in New York.

The Mitchell Motor Car Co. of New York has instituted a rental department. The Mitchell touring cars which will be rendered available for the service will be rented, however, only with one of the Mitchell company's regular drivers. The rates that will apply are as follows: Per hour, $5; six consecutive hours, $25; one week day (10 hours), $35; one week (six days), $150; one month, $500.

Shift of Fisk Branch Managers.

W. J. Lamb, who several months ago was transferred from management of the Fisk Rubber Co.'s Detroit store to the corresponding position in the New York branch, has returned to the Detroit post. The vacancy in New York has been filled by the transferral of J. B. Kavanaugh.

REORGANIZATION OF THE ROYAL

Receivers Recommend Capitalization of Its Indebtedness—Fate of Company to be Decided To-day.

If the recommendations of the committee of three, appointed by the receivers, are carried out, the Royal Motor Car Co., Cleveland, Ohio, will be reorganized by the creditors' acceptance of stock in payment of their claims. The committee, was composed of Charles E. Adams, vice-president Cleveland Hardware Co.; S. F. Haserot, president The Haserot Canneries Co., and formerly chairman of the board of directors of the Royal Motor Car Co., and F. A. Scott, secretary and treasurer of the Superior Savings and Trust Co., which latter institution is the receiver for the Royal company.

Previously, the estate had been subject to appraisal as a going concern, and was found to be worth $397,833.67, the most valuable items being as follows: Cars at factory and in agents' hands, $89,828.40, raw material and parts, $98,762.48, machinery, $91,784.35, equity in buildings, etc., $55,725.82. The schedule in bankruptcy had placed the total assets at $443,959.59, and the liabilities at $510,832.12. Of the latter amount $261,092.65 was represented by notes payable, and $164,744.68 by accounts payable.

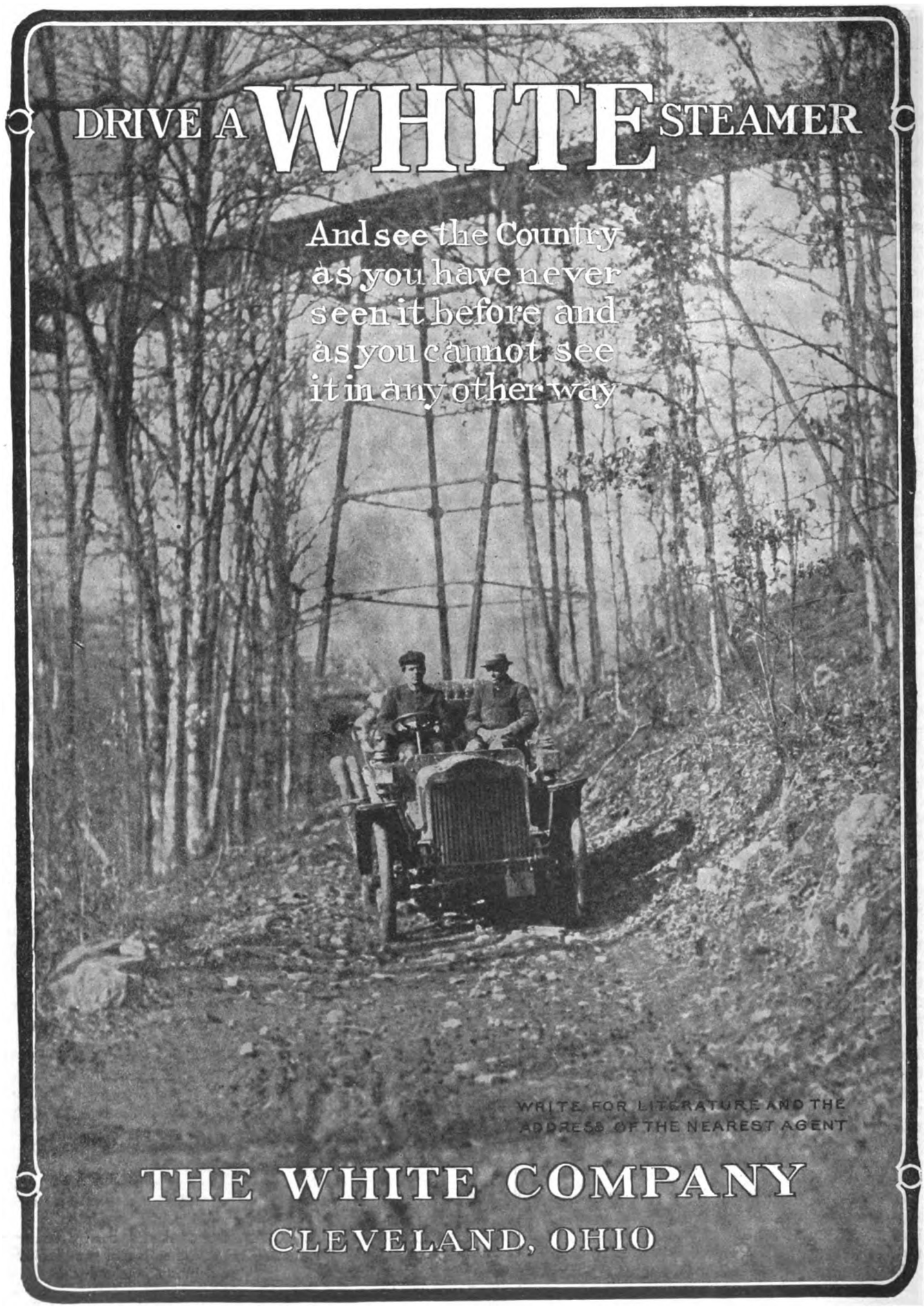
Of the 400 creditors, the claims of 235 are for sums of $100 or less, aggregating $6,000, which the receivers' committee advises be paid in cash, and that the property then be sold to "a new corporation composed of the creditors" by the issuance to them of preferred stock, the entire control of the company to remain with these creditors until 50 per cent. of the proposed preferred stock shall have been retired.

The committee lays stress on the fact that the appraisal is based on the value of the property as a going concern and points out that the real estate and plant are held under a land contract from a syndicate on which there already is a default. The syndicate is therefore in position to foreclose at any time. The equity in this land contract that would be lost to the creditors through foreclosure proceedings, is $80,725.82.

The committee also points out that included in the item of $98,762.48 of automobile parts and raw material scheduled by the appraisers, is an allowance of $10,000 for parts for Model "M" car, which parts cost the company approximately $67,000; but as the car has never been completed and marketed, the parts will become absolutely valueless unless put into the form of a finished product.

The fate of the company probably will be decided at a meeting of the creditors which is being held in Cleveland to-day.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞ Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, FEBRUARY 20, 1908

The Press and the Price-Cutters.

If legitimate dealers were asked what one factor serves most seriously to disturb the retail trade, there is small doubt that the great majority of them would specify price-cutting. When prices are cut, all values are unsettled, and every dealer is placed on the defensive and his sales are rendered much more difficult. It is bad enough when prices are cut secretly, but it is when the cut prices are published and thus spread broadcast that real and widespread damage is done.

As a rule the man who makes a business of cutting prices is a cunning individual who has no real or lasting regard for or interest in the trade. He will forsake it the moment he has squeezed the orange dry. As a general thing, the goods he announces in spreadeagle fashion are doubtful goods —goods that are ante-dated or "off color" in some way; frequently they represent purchases of bankrupt stocks, which implies that replacements of parts will be impossible. Occasionally, such merchants lay hands on goods of unquestionable repute and condition and it is then that they shriek loudest and advertise boldest. Generally speaking, such goods are secured from a disgruntled agent who, because of a dispute with the manufacturer, hopes to "get even" and to injure the latter by unsettling his values. Several instances of this sort recently have occurred, and though the number of the articles obtained was small, the price-cutter advertised in a manner that made it appear as if his stock was unlimited.

With few exceptions, the publications in which such advertisements have appeared are the very ones that express an almost holy love for the automobile industry. The manufacturer and the dealer who are courted assiduously, pay their good money and if they receive a little gratuitous "soft-soap" in the reading columns, they overlook entirely the spreadeagle advertisement of the price-cutter which, in another column, or the same column, does damage to them and which minimizes or nullifies their announcements. This sort of thing is bad enough on the part of the daily press, but when the automobile publications themselves open their pages to the price-cutter, it is time for protest. The damage done by a questionable advertisement in a daily paper is largely localized. When it appears in a trade paper it is spread over a great expanse of country. The seed of trouble is planted and values unsettled in hundreds of places. Hundreds of dealers are affected.

It is not to call attention to the fact that the Motor World never has solicited a cut-price advertisement, or permitted one to appear in its columns, but because other papers which are prone to call attention to their virtues, have done and are doing that very thing—some of them even permitting the advertisements to appear on their "bargain price" pages, while their regular and legitimate patrons are obliged to pay full rates. It would seem that ordinary regard for the health of the industry and fair dealing toward the manufacturers and dealers who enable them to exist would inspire the eradication of disturbing factors—and there is no question regarding the disturbance caused by the publication of cut prices. The industry has a right to expect that its interests will be conserved and protected by its own organs. It is a fair assertion also that when manufacturers have bargains to dispose of, they should give their own agents or other legitimate customers a chance to purchase and dispose of them in the regular channels before having resort to professional price-cutters, whose practices always are injurious.

Horsepower vs. Piston Displacement.

What a motorcycle manufacturer has done, some automobile manufacturer should have courage enough to do, i. e., break away from the slavish, elastic and unmeaning, if time honored, term "horsepower."

Fame awaits the man who places the rating of his engines on a definite and unfanciful basis; and piston displacement is a basis of the sort. It affords no room for guess or subterfuge and aside from affording purchasers known values and unfailing comparisons, it is a basis that places designers on their mettle and holds them up to their work. When of two engines having the same displacement one proves of superior power, the evidence is irrefutable that there is something lacking somewhere in the men or the mechanical makeup responsible for the other engine.

Piston displacement several times has been discussed by automobile manufacturers. It is now time that one of them passed the talking point.

Fuel Problem and Its Influence.

How much of popular misconception is covered by the prevalent term gasolene, is not generally appreciated. How much remains to be learned of the properties of the ideal fuel is even less readily comprehensible. As set forth in another column, it appears that changes in market conditions, governed chiefly by the rapid and lusty growth of the motor industry, have so altered the status of the ordinary fuel of commerce as to render the former test by specific gravity of no avail. The fact that this is but an outward indication of a vastly more significant change which is destined to come is not as easy to appreciate.

The importance of the fuel problem is generally admitted. Sooner or later it is likely that gasolene as such will become too expensive to be of practical value to the ordinary user. A new standard fuel will have to be adopted, and its adoption will involve certain changes in engine design which though not material from the ordinary point of view, yet must have great effect upon the question of efficiency, or,

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roughly, upon the amount of plant required to produce a given unit of power. Not until a fuel can be chosen which may be regarded as reasonably permanent will it be possible to fix upon standards of design as absolute and exact. Meanwhile much remains to be accomplished in the study of conditions governing the actual behavior of the fuel in an intimate way.

Concerning the Glass Front.

Affording protection from the elements to the driver of a car is a problem, the solution of which is as difficult as it is important. Though the glass front does afford protection from the wind, it is not entirely practical for the purpose of keeping out the rain or snow, for while it will serve that end, it also offers a surface to which moisture adheres with the consequent result that it becomes translucent instead of remaining transparent. This, of course, prevents the closest observation of traffic conditions, so essential to the careful operation of a car through crowded streets where distances must be actually figured by inches and allowances made in time to prevent accidents.

In fair weather the glass front, as now generally constructed, offers an ideal protection from the wind. The earlier types of this had a serious defect in that they were constructed for use on limousine bodies, with a wood panel 3 or 4 inches wide, and when in place in the frame of the car offered an obstruction to the vision in the form of a solid piece of frame work 6 or 7 inches in width. This obstruction shut off a wide angle of the road and vehicles within that field could not be seen unless the driver kept moving his head and body from side to side, which was inconvenient and sufficiently objectionable to be considered a strong argument against the use of the glass front as then arranged.

Experience quickly showed that this objection must be overcome. As a result the wood frame gave way to a small brass rod and as this offered no visual obstruction it has come to be generally adopted and with entirely satisfactory results so far as the subject of glass as a wind shield is concerned.

While it is essential to the comfort of the occupants of the front seats that they should have protection from the snow and rain, and while it is desirable that the dashboard accessories should be kept dry, it is vastly more important that a driver should have an unobstructed view of the roadway and its surroundings, a more comprehensive view than can be obtained through moisture covered glass. The solution is not easy, but it may be that this can best be obtained by a slight change in the design of the car body, in the case of limousines, or in the top, when one has in mind the touring car. The necessity of driving with the view unobstructed by translucent glass would be done away with if the glass came only so high as to be a little below the level of the eyes, and if this arrangement was supplemented by the overhead protection, either standing or cape top, having arranged on it a sort of a visor or peak which projected from the top outward and down to a point where its lowest extremity would be slightly above the level of the eyes and some distance in advance of the glass, an adequate protection would be afforded from wind and wet and nothing would be introduced between the road and the eyes.

To those who find that glass is undesirable, because of a possibility of accident where it may be broken and personal injuries be sustained by coming in contact with the jagged edges, this idea of the visor and, shall we say, "half front," can be further carried out by substituting a wood panel for the glass, as either the one or the other serves to protect and the position of either is such that it is looked over, instead of through.

While practically every inn and road house of any pretensions is striving for the patronage of the automobilists, there is one phase of the situation which is practically overlooked and that is provision of suitable accommodations for the chauffeurs. The fact that the drivers are employes instead of principals, is neither reason or excuse for treating them as the menials of the establishment in which they may seek refreshment, and as, in most places, the food served them is charged for at the same price as that served to "milady" in the dining room, they are justified in expecting and demanding that surroundings and attention be given them to the end that they may have their meals, for which they pay, served in a place apart from "kitchen help."

A sub-committee of the A. A. A. racing board now is engaged in revising and otherwise overhauling the rules. If the committee decides to continue the stultifying and inconsistent rule whereby an amateur may compete for cash or against professionals and yet remain an amateur, it is hoped that an explanatory chart or diagram will be permitted to accompany the rule in order that the manner in which the reversal of the world's understanding of amateurism was accomplished may be made plain. It will be a good idea also to include in a footnote, the reasons why, simply because they are engaged in the trade, Messrs. Henderson, Clifton and Briscoe, the heads of the three trade associations, for instance, must line up in the professional class as side partners of Barney Oldfield, "Red" Flanagan, "Micky" O'Toole, and the rest of the cash-chasing "sportsmen."

COMING EVENTS

February 21-29, Newark, N. J.—New Jersey Automobile and Motor Club's and New Jersey Automobile Trade Association's annual show.

February 22, Houston, Tex.—Houston Automobile Club's race meet at Harrisburg track.

February 22, Boston, Mass.—Bay State Automobile Association's 150 miles endurance run to Providence, Worcester and return.

February 24-29, Lincoln, Neb.—Dealers show in the Auditorium.

February 24-29, Portland, Me.—Annual show in the Auditorium.

February 25, Brooklyn, N. Y.—Long Island Automobile Club's 242 miles economy run to Montauk Point and return.

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 2-8, San Francisco, Cal.—California Woman's Automobile Club's show in Coliseum.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

March 15-April 1, Omaha, Neb.—Omaha Automobile Dealers' Association's annual show in the Auditorium.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association's annual show in Duquesne Garden.

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MANY CARS STAGED AT CLEVELAND

Annual Show the Best the City has Seen—The Decorative Scheme a Dream in White and Gold.

White and gold, always a striking combination rich in harmony, forms the basic color scheme of the Cleveland show, which is "holding the boards" in Central Armory this week. Judicious distribution of more than 7,500 incandescent bulbs heightens the artistic effect, and added to the whole, the restful effect of uniform signs make the present show the "prettiest ever" in Cleveland, or, at least, such is the locally expressed opinion.

The doors were thrown open on Monday night, and the show will continue throughout the week. The Cleveland show is, perhaps, one of the most important of the many numerous local exhibitions. At the present show no less than 68 exhibits, of which 38 are accessories, are displayed. The 29 agencies and branch houses are showing 39 different makes of cars, a striking illustration of the extent of the automobile trade in Cleveland. The exhibitors are as follows:

H. S. Moore, Stoddard-Dayton; Chisholm-Phillips Auto Co., Stevens-Duryea; Elmore Motor Car Co., Elmore; The White Co., White; Peerless Motor Car Co., Peerless; Rauch & Lang Carriage Co., R & L electric; Garford Motor Car Co., Garford; Price Bros. Carriage Co., Baker; R. H. Magoon Motor Car Co., Chadwick, Jewel and De Luxe; Hall Bros., Cartercar; Gaeth Auto Co., Gaeth; Ohio Motor Car Co., Stearns, Cadillac, Columbia; Metropolitan Motor Car Co., Pierce; Winton Motor Carriage Co., Winton; Standard Automobile Co., Packard and Buick; Oldsmobile Co., Oldsmobile; Woods Motor Vehicle Co., Woods, Leonard Motor Co., Jackson; Byrider Electric Auto Co., Byrider; Oakland Motor Car Co., Oakland; Brush Runabout Co., Brush; Wentworth Motor Car Co., Mora and Ford; C. M. Cachat & Co., Wayne; Reese Motor Car Co., Columbus, Royal and Corbin; George S. Patterson, Reo and Premier; T. C. Whitcomb Auto Co., Rambler; Studebaker Automobile Co., Studebaker; Auto Shop Co., Thomas and Franklin; Cuyahoga Motor Car Co., National.

Fisk Rubber Co., Standard Welding Co., Collister & Sayle, Veeder Mfg. Co., George A. Rutherford Co., Charles E. Miller, S. F. Bowser & Co., Inc., Diamond Rubber Co., B. F. Goodrich Co., Goodyear Tire & Rubber Co., American Ball Bearing Co., J. P. Davies & Co., National Carbon Co., Echo Horn Co., Auto & Supply Co., Cleveland Tanning Co., N. Y. & N. J. Lubricant Co., Austro-American Separator Co., Hartford Suspension Co., Columbia Refining Co., Perfection Spring Co., Gabriel Horn Mfg. Co., L. J. Mueller, Howe Scale Co., Jones Speedometer Co., Ohio Rubber Co., Simpson & Gray, Warner Instrument Co., Continental Agency Co., Gerro Machine & Foundry Co., William Taylor & Co., Non-Explosive Safety Naptha Retainer Co., Sprague Umbrella Co., Crawford & Soper, K. & W. Ignition Co., Westinghouse Electric & Mfg. Co.

Pope Receivers Report a Busy Month.

According to the report of the receivers, filed in the court, the cash receipts of the Pope Mfg. Co.'s Hartford factory during January amounted to $141,382.66, while the months disbursements totaled $129,409.91. Including $11,284.31 carried over from December, the cash balance in Hartford banks is $23,257.06.

The chief sources of receipts were from collection of account and notes receivable $12,920.99, receipts from sales $123,868.10, and from deposits by customers on orders for automobiles $2,425. The cash disbursements were as follows: Refund of deposits received on miscellaneous undelivered orders, $144.51; receivers' expenses and payments for purchases, $126,248.33; premium on receivers' bond, $200; traveling and special advances, $825; advances for pay rolls and expenses and payments on accounts to receivers in Massachusetts, Maryland, New Jersey, Illinois, Missouri, New York, Pope Motor Car Co., $1,992.07.

Accrued liabilities of receiver for materials, supplies and miscellaneous expenses $36,636.89; for pay rolls, factory and office, $7,680.15; total, $44,317.04.

Balances due receivers of Pope Mfg. Co. and Pope Motor Car Co. in other districts, $14,720.95.

Accounts receivable from sales of receivers, December 31, 1907, per last report, $97,709.77; sales by receiver for month of January, 1908, $129,409.19; total, $227,418.96, less cash collections for month of January, $123,868.10, and deposits credited to accounts receivable, cash discounts and miscellaneous contra accounts ($9,483.38) $133,351.48, leaves total $94,067.48.

Balances due from receivers of Pope Mfg. Co. and Pope Motor Car Co. in other districts for transfer of merchandise and supplies and advances for expenses, $6,126.29.

Australia a Promising Market.

Australia is likely to furnish a good market for American automobiles, if the trade is properly handled from now on, and efforts made to supply a product in which reliability in operation is a prominent feature, according to Harry R. Burrill, special agent of the Department of Commerce and Labor, who has made an extended investigation of foreign trade conditions. Contrary to what might be expected he says that "there is no prejudice observable in favor of England because she is the mother country, and products from her factories must compare favorably in cost with those of competing nations or she will lose the trade."

CALLING A HALT ON CONTESTS

Their Frequency Prompts Chicago Dealers to Limit Their Entries—Members of Motor Club Take Offense.

Believing that a multiplicity of automobile contests is too great a drain upon the resources and time of the average dealer, the Chicago Automobile Trade Association has decided that it will call a halt by simply withholding entries until all conditions are found to be more favorable. Members of the Chicago Motor Club, which has taken the initiative in promoting contests in the Windy City for the past two years, think the action of the dealers is a direct slap at them because of the differences which grew out of the 600 miles endurance run held just before the Chicago show.

Thomas Hay, manager of the Ford branch in Chicago, caused the resolution to be brought before the notice of the dealers when at the last meeting he suggested that, before the dealers enter any more contests, they withhold their entries until a special committee of the Chicago Automobile Trade Association shall have reported as to the advisability of entering such proposed contest. If the conditions of the contest and the entry fee, besides the feasibility of it, appeal to the dealers then they will enter, with the provision, however, that the club promoting such contest shall report to the association upon the financial results after it is held, a proceeding that doubtless will be balked at by those individuals or organizations promoting automobile contests.

According to Windy City reports automobile contests are becoming too numerous for the dealers, and this was their chief argument in support of the Hay resolution. Two or three interesting, sensible contests during the season are stimulating to the trade, they aver, but numerous contests are too great a drain upon the dealers in return from the benefits they receive from such contests.

The action of the trade association has provoked considerable discussion and comment in Chicago. The dealers say that in passing the resolution they are looking to their own interests, and that if they did not take action of the sort it would not be long before they would have to give up selling cars and take to competing in contests all the time. On the other hand, some of those interested in the Chicago Motor Club think that the resolution was directed straight at them on account of the late endurance run, at the conclusion of which the technical committee split hairs in an effort to arrive at the winner, when nearly a dozen cars finished with perfect scores, and all but one were finally ruled out because of some minor technicalities that had no bearing upon the enduring qualities of the cars affected.

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RACING RULES TO BE REVISED

Special Committee Appointed by the A. A. A. Racing Board—Action Taken on Wilkes-Barre Prize Hold-up.

Besides the appointment of a special committee to revise the racing rules, and a notification to the Wilkes Barre Automobile Club to deliver a prize which it has thus far failed to do, nothing else of importance was transacted at the first meeting of the new racing board of the American Automobile Association, held in New York City Saturday last, 15th inst.

Chairman Jefferson DeMont Thompson presided at the meeting, which was attended by eight of the other twenty-nine members, those present being A. R. Pardington, Brooklyn; Charles J. Swain, Philadelphia; A. L. Riker, Bridgeport; A. B. Lambert, St. Louis; Alfred Reeves, A. G. Batchelder and S. A. Miles, New York City, and Louis R. Speare, Boston.

The board sent word to the Wilkes-Barre Automobile Club, of Wilkes-Barre, Pa., that unless it sent to Walter White, of Cleveland, within thirty days, the prize in the free-for-all event at its hill climbing contest held on May 30th last, the club would be suspended from all sanction privileges until the prize was delivered. This action was in the nature of upholding a decision of the 1907 racing board, which had decided that the Wilkes-Barre club had no right to exclude White from the free-for-all after it had accepted his entry for the event.

Considerable time was spent in discussing the racing rules both at the regular morning session and at the supplementary afternoon session. Chairman Thompson, A. L. Riker, Alfred Reeves and S. A. Miles were appointed a special committee to revise the racing rules.

This special committee met on Tuesday, this week, and worked all day without completing their labors. Another meeting was called for the following day, following which it is expected that the new racing rules will be ready to be made public.

Although no official announcement has has yet been issued, Frank B. Hower, president of the Automobile Club of Buffalo and chairman of the touring board of the American Automobile Association, who is in New York City at the present time, is said to have stated that the annual Glidden tour will this year start from Buffalo, during the week beginning July 6. The Buffalo organization has made an appropriation to care for a two days' good roads convention which will be held in Buffalo probably on July 6 and 7. If these dates finally are decided upon it is probable that the annual Glidden tour will leave from that city upon the day folowing the convention. The exact route of the tour has not been decided but will probably lead to Pittsburg, Philadelphia, New York, New Haven, Boston and to the White Mountains. The rules for this year's tours are now being drafted.

Wilkes-Barre to Repeat Its Climb.

Although it has not yet delivered the prize in the free-for-all event in its hill climb last Decoration Day to Walter C. White, whose protest that he was entitled to the prize, for although he had been barred from the event, his car made the fastest time of the meet, was upheld, it is evident that the Wilkes-Barre (Pa.) Automobile Club intends to do so. This supposition is based on the fact that the Pennsylvania club this week announced that it would repeat the annual climb on May 30th, this year, which it cannot do if the prize is not delivered within thirty days, according to a decision of the racing board of the American Automobile Association. The announcement that the Wilkes-Barre Automobile Club will repeat the climb was made at the annual meeting, when the following new officers were elected: President, George F. Lee; vice-president, Lyman H. Howe; secretary, Dr. E. C. Wagner; treasurer, Peter A. Meixell; executive board member, W. E. Steelman.

For the Federal Registration Bill.

Thursday, March 12, has been set as the date for the hearing on the federal registration bill, designated as "House Bill 428," which the American Automobile Association has succeeded in having introduced at the present sesion of Congress. The Judiciary committee of the House, to whom the bill was referred, will listen to arguments upon it, the hearing beginning at 10:30 a. m., of the date stated. Preliminary to this hearing a conference of the delegates of the various clubs and associations will be held at the New Willard hotel, in Washington, at 8:30 p. m., March 11th, and every club and affiliation of the American Automobile Association is being importuned to be represented by delegates on the dates mentioned. On Thursday evening the Automobile Club of Washington will informally entertain the visiting delegates at their club house. That the bill stands an excellent chance of passing both the House and the Senate is the belief of Hon. R. C. Moon, who is on the Judiciary committee,

American Entry for Grand Prix.

America will be represented in the famous Grand Prix race of the Automobile Club of France, which is to take place over the Dieppe circuit early in July, the date having not been definitely fixed. Just before the entries closed on Saturday last, E. R. Thomas cabled the entry of a Thomas car, to be driven by Montague Roberts. According to report the car which Roberts will drive in the French race will not be a racing car, but a model of the stock car he is to drive in the Briarcliff trophy race, if the latter event takes place. It is stated that Roberts will sail for Europe early in April.

FLORIDA SAND FEST A CERTAINTY

Official Announcement Settles Doubts—Chairman Morrell Claims 28 Entries, but Names only Twelve.

The Florida beach carnival will take place during the week of March 2 to 7, despite reports that its fate was uncertain. All doubts about holding the annual sandfest were set at rest Monday when the contest committee of the Automobile Club of America made the definite statement that the meet would take place during the first week of March as advertised.

R. Lee Morrell, chairman of the contest committee, said that so many conflicting rumors have been in circulation that many dealers and manufacturers have refrained from entering cars, and in order to give them a chance, the date of closing the entries has been postponed until February 29th. It will be remembered that Morrell some time ago postponed the closing of entries for the proposed Briarcliff trophy race for much the same reason.

It also was announced that a special compartment club car for the accommodation of contestants and members of the club will leave New York City on Saturday, 28th. It will be due in Ormond at 11.57 p. m. Sunday.

Although Mr. Morrell stated that he had received "no less than twenty-eight entries," only twelve were made public, as follows:

Maurice G. Bernin, 60 Renault; Emmanuel Cedrino, 60 Fiat; E. B. Blakeley, 130 Christie; H. B. Shefts, 120 Hotchkiss; John B. Ryall, 120 Woolsey; R. W. Buckley, 110 B. L. M. or Fiat; R. G. Kelsey, 50 Haynes; W. Gould Brokaw, 50 Christie; E. B. Blakeley, 30 Allen-Kingston; James Loughlin, 3d, 30 Cleveland; John J. Ryan, 90 Stearns, and P. W. Strong, 60 Welch.

In the 228 miles event for the Automobile Club of America's cup, the Renault, Christie, Fiat, B. L. M., Haynes and Woolsey cars have been entered. The same cars, with the exception of the Haynes will take part in the 100 miles race. The entries for the stock car race are a Welch, Haynes, Christie and Allen-Kingston. All the high powered cars will try for records.

As an extra feature, three events for motorcycles have been carded, at one, five and ten miles. It is stated that ten entries have been received from the Indian, Curtiss, M-M, and Peugeot representatives.

Averages 83 Miles per Hour.

Charles Jarrott has set up another staggering record on the Brooklands motor track in England. On February 5th he covered 50 miles in 36.05 76-100, an average of 83 miles per hour. The former record was 37.45 9-10. Jarrott had intended to try for the hour record, but a punctured tire stopped him.

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LONG WINTER TEST ON HIGH GEAR

Counselman Driving Over 3,000 Miles of Snow—Not Even the Reverse Speed Available for Hills.

Sleigh riding is out of date, snow riding in an automobile is nothing new, but when such latter ride is attempted with all the gears but the high removed the performance smacks of the unusual. Such is the trip that has been undertaken by a Thomas Detroit car, which appropriately has been dubbed the "Snow Bird."

The "Snow Bird" left Detroit in charge of Lee Counselman, sales manager of the Thomas-Detroit Co., and is zig-zagging around the country wherever snow may be found. It is planned to cover 3,000 miles on the high speed before the mid-winter trip ends.

Long distance runs on one gear have been made before, but this is the first time a journey of the sort has been attempted in mid-winter, with all the gears but the high removed from the car. In the "Snow Bird" there absolutely is no low speed, intermediate or reverse, the latter having been removed so that it would not be possible to back the car up hills, a resort, that has been tried, it is claimed, where only the low and intermediate gears have been removed.

The start was made early this month from Detroit. Counselman was in the driver's seat and he will take the car to Toledo, where it will be turned over to C. B Hills, who is connected with the engineering department. When Counselman left Detroit a severe blizzard was in progress, with a foot of snow on the ground, and the temperature bordering uncomfortably close to zero. Before the unique test shall have ended it is expected the car will have buffetted snow banks in five States, passing through Toledo, Marion, Columbus, Springfield, Dayton Cincinnati and Hamilton, in Ohio; Richmond, Indianapolis, Kokomo, and Logansport in Indiana; Chicago and other cities in Illinois, Milwaukee in Wisconsin, then backtracking to Chicago, and around the lake front to Grand Rapids, from where it will return to Detroit.



PICTURESQUE SCENE ON THE ROUTE OF THE "SNOW BIRD"

Testing Automobile as Dispatch Bearer.

In an attempt to prove the value of the automobile in carrying dispatches between army posts, John Holm and William Walls, two crack drivers of the Studebaker Automobile Co., started from New York City, Tuesday, 18th inst., bound for Fort Leavenworth, Kan. They will visit all the army posts between this city and Fort Leavenworth, carrying a letter from Major-General Frederick Dent Grant, stationed at Governor's Island, N. Y., which is to be "vised" at each post. A 30 horsepower Studebaker runabout is being used for the purpose. Holm and Walls propose to follow the same route as that taken by the New York-Paris "racers," including the cities of Albany, Utica, Syracuse, Rochester, Buffalo, Erie, Cleveland, Toledo, South Bend, and Chicago, to Kansas City and Fort Leavenworth.

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A NEW YORK-PARIS "RACER" QUITS

Covered 96 Miles in Six Days—Another "Racer" Towed by Horses—Snow Shoveling Still Continues.

Approximately one-twenty-fifth of the distance the cars competing in the overland trip from New York to Paris will have to cover if they get there, has been traversed by the leading car—the only American car in the so-called "race." Montague Roberts, driving the Thomas car, reached Toledo at 9.35 p. m. Tuesday, having covered 785 miles. At that time the DeDion car, in charge of Bourcier St. Chaffray, had reached Fremont, 756 miles, the Zust, driven by Sirtori, arriving at Cleveland, 667 miles, at the same time the De Dion pulled into Fremont for dinner. The Prothos, with Ernst Maas at the wheel, was then at Erie, Pa., 556 miles, and the heavy Motobloc, in charge of Charles Godard, had gotten to Buffalo, a distance of 471 miles. The Sizaire-Naudin, the other contestant which started from New York on Wednesday last, 19th inst., is out of the contest. It succeeded in reaching Red Hook, N. Y., 96 miles from the start. If they reach Paris the remaining cars will have covered about 20,000 miles.

That all the cars have been having trouble there is no doubt and also that the contest has developed into a snow-shoveling match, as the Motor World predicted, there is no contradiction. Heavy snow storms were encountered through New York State, and as a result all the cars were much behind schedule.

On the second day out from New York only two of the cars reached Fonda, N. Y., before nightfall. They were the Thomas and the Zust, the De Dion stopping at Amsterdam, 186 miles, while the Prothos and Motobloc got as far as Albany and Hudson, respectively The poor little one-lunger—the Sizaire-Naudin—was laid up at Montrose, 40 miles, with a broken differential.

Friday, the 14th, saw three of the cars reach Canastota, N. Y., 275 miles, within a few minutes of each other. The Prothos got as far as Utica, 148 miles, and the Motobloc remained in Albany all night. The Sizaire-Naudin, which had been repaired, made four miles that day, stopping at Peekskill. The three leaders—the Thomas, Zust and De Dion—took turns at leading during the following day and rolled into Geneva, 352 miles, together before supper time. Both the Motobloc and the Nandin experienced mechanical troubles.

Naturally there was a great demonstration when the Thomas reached Buffalo, its home town, in front of the others Sunday, 16th inst. An escorting party of Buffalo automobilists met Roberts several miles from the city, and all speed limits were forgotten in the run to the center of Buffalo. The Thomas reached that city two hours in advance of the De Dion, while the Zust was laid up some hours at Rochester with a disabled gear. The Prothos and Motobloc were some distance behind, while the little Naudin, was put out for good at Red Hook, N. Y., 96 miles from New York City. An amusing incident happened at Buffalo, which shows that the Frenchmen mean business, and will not forget it for a moment even to enjoy a good meal.

E. R. Thomas had planned to give the competitors a banquet and it was so arranged. St. Chaffrey, the generalissimo of the run, suddenly slipped away unknown to the others and was on the road to Erie, Pa., before Roberts, who in the meantime had sent his car to the factory to be overhauled, heard of it. There was nothing to do but to follow, and the Thomas was hastily gotten into commission, and Roberts started in pursuit. The wily Frenchman was overtaken at Erie, where he stopped to spend the night. The crew of the Zust car, although hampered by lots of tire trouble, resolutely kept going and reached Ripley, 543 miles, before darkness set in.

That the Italians mean to take no rest until they overhaul the leading Thomas and De Dion cars was evidenced on Tuesday They reached Cleveland at 7 o'clock that night, and although fagged out, started moving again at 1 o'clock Wednesday morning.

Roberts does not mean to continue with the Thomas car all the way to Paris, as evidenced by the fact that he is entered in the Briarcliff trophy race as well as the Grand Prix to be held in France during July. When Roberts and Schuster, the alternate driver, quit, the car will be turned over to William Brown, to continue on the trip to Paris.

Just what has become of the independent car which started from New York City, one day before the main division in an attempt to beat the sextette to Paris, not even the New York newspaper which projected the American end of the adventure, seems to know. As recounted in last week's Motor World, the car had to be towed a great part of the way to Philadelphia—it is taking a different route—and after spending two or three days in the Quaker City the three adventurers got into a dispute among themselves and Driege and Hohman, left the city without Le Louvier, who claims to be the originator of the New York-Paris idea, and who, becoming piqued when the Paris newspaper promoting the affair refused to follow his suggestions, decided to organize a race of his own. According to Philadelphia advices not one of the three men knows as much about driving a car as the majority of garage office boys, and the result has been disastrous. The car has been lost sight of completely.

Reports received in this city last night show that the leading cars have run into a severe snowstorm and are making slow progress. Roberts succeeded in pushing his Thomas on to Kendallville, Ind., 891 miles. The Thomas got stuck in a snowdrift two miles from Kendallville and it was nearly midnight, Wednesday, before a party of farmers cleared a path for it to proceed. As it is leading naturally the Thomas car is having a harder time of it than is the De Dion, following closely behind. The leading car breaks the snowdrifts, so that it is much easier for the car behind. In view of this it is not surprising that while the Thomas car yesterday only covered 110 miles, the DeDion made 22 miles more. However, the De Dion ran into a big drift while turning off the main road in Corunna, and—alas and lackaday!—had to be towed into town by horses. In "races" of this sort, however, towing or anything else is allowable. It remained in Corunna over night. The Italian Zust succeeded in reaching Bryan, Ohio, 854 miles, last night, having made a remarkable run of 187 miles through the snow in its efforts to overtake the leaders. The Prothos was last heard from in Ashtabula, Ohio, but Cleveland reports state that it cannot be located, and is believed to be snowbound some miles from that city. The Motobloc, the tail-ender, now that the Naudin has withdrawn, is also stuck in a snowdrift about 20 miles from Erie, Pa., and Godard and his crew are taking advantage of their plight to secure a few hours' sleep.

If the present storm does not abate the crews will doubtless be compelled to shovel their way into Chicago yard by yard. A. J. Banta and Paul Picard left Chicago several days ago to meet the snow shovelers, and Picard returned to Chicago last night. He said that in all his experience he never hac seen conditions so terrible. Trees and fences are hidden under snow. Banta is completely snowed under, but refuses to go back. In 48 hours he has covered only five miles.

Odd Wail that Comes from China.

That the universal adoption of the motor vehicle for business and pleasure must ultimately work havoc with the Chinese cutlery trade, is the astonishing conclusion which must follow any contemplated shelving of the horse in favor of the more modern auxiliary of transportation. One of the constantly growing imports into the province of Shantung, China, is scrap iron consisting largely of old horseshoes. So great is the demand for this material that a recent single shipment of 300 tons was not considered at all extraordinary. The knife and tool makers all over the province use the metal in making their wares, claiming that it has a peculiar temper due to the constant beating it receives under the horses' feet, which it is impossible to obtain in any other way.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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"76 GASOLENE" A DELUSION

Why the Baume Test Fails to Indicate Fuel Value—Evolution of the Processes of Production.

If the average motorist were to be told that "76 gasolene," which he has been taught to believe is the proper fuel for his engine, is no better than 60 or 80 gasolene, he would receive a distinct shock. If he were to be told further, that the ordinary specific gravity test, which has been held up as the proper basis of judgment for a number of years, has practically nothing to do with the essential properties of the fuel, as such, he would probably turn away in scorn. That such is the case under existing conditions, merely goes to show how far behind the times popular ideas may stray when based on custom and precedent.

It is by no means a novel suggestion that the gasolene produced for automobile consumption is far from the simple substance which its name implies it to be. Originally a plain fractional distillate from crude oil, employed to a limited extent in enriching the coal and water gas used for household illuminating purposes, the growth of the automobile industry has so influenced the market as to render it practically impossible to produce a simple oil answering to the requirements which have been built up under that inclusive name. What was one time largely a by-product and often thrown away, now has become an important staple in the market for the manifold petroleum derivitives. Incidentally, the status of the "naptha" or gasolene of commerce, has been changed to a remarkable extent, and in the course of the transformation, while its efficiency as a motor fuel has in no way been diminished, its composition, chemically and physically has undergone sufficient alteration to completely nullify the value of the specific gravity test.

It should be observed, that even before this change had become sufficiently marked to render the former standard of comparison of no avail, much confusion had been wrought by the common misunderstanding as to the relation between specific gravity, and the reading of the hydrometer by means of which it commonly is measured. Unfortunately for the non-technical observer, the average hydrometer, or "specific gravity indicator," as such instruments are sometimes erroneously termed, is graduated to read in the Baume scale. As it happens, 70.0 Baume, is the indication coresponding to a specific gravity of 70.2 per cent. This is the basis of confusion of the terms. It would do little harm were it not for the fact that the two scales "cross" at about this point, higher specific gravities being indicated by lower Baume readings.

In this way, the 76 gasolene of commerce would be of 68 per cent. specific gravity—were this indication always a reliable one. As will be shown presently, however, the so-called "76" does not always answer to the 76 test, whence much dissatisfaction and many complaints have arisen. That many of these complaints have not been well founded, also will appear presently. The accompanying table serves to illustrate the comparison between Baume and specific gravity, and is made to include the range about which so much misguided contention has hinged:

Baume	Specific Gravity.	Baume	Specific Gravity.	Baume	Specific Gravity.	Baume	Specific Gravity.
60.0	.739	65.0	.720	70.0	.702	75.0	.685
61.0	.735	66.0	.717	71.0	.699	76.0	.682
62.0	.731	67.0	.713	72.0	.695	77.0	.679
63.0	.728	68.0	.709	73.0	.692	78.0	.675
64.0	.724	69.0	.706	74.0	.689	79.0	.672

In order to understand how the specific gravity or Baume test has come to lose its value as a measure of the suitability of the fuel, it is necessary to go back into the history of gasolene far enough to trace the increasing demand for it and the way in which that demand has affected its production. Originally, the naptha or benzine from which gasolene is made, was largely a by-product of the process of refining crude oil, or petroleum. In the early history of the oil industry, there was practically no market for naptha, and the bulk of that produced was allowed to go to waste, either deliberately or through lack of economy in the manufacturing processes. Eventually markets were created until it ceased to be a total loss, though it was by no means regarded as an important member of the crude oil family.

Its early general uses were chiefly confined to such manufacturing purposes as those involving the extraction of oils from vegetable or animal matter, the mixing of paint, and the solution of varnish gums. Its most important service, however, was performed in its application to the production of illuminating gas, where it ultimately eliminated the use of the expensive Cannel coal, substituting a domestic for an imported element in the raw material used. Yet even within the present decade, these uses had not begun to absorb all the naptha produced, and large quantities of it were burned under boilers, in order to get rid of the surplus without actually wasting it.

Then came the development of the internal combustion motor, using first gas, and then gasolene, as it had come to be known. For the purposes of motor fuel, it was found that a grade of gasolene which answered to the 76 test served to best advantage, and accordingly that basis was accepted as the standard by motorists and dealers, in a purely arbitrary manner. Soon, however, the rapidly growing use of internal combustion engines, chiefly in connection with the pursuit of motoring, began to create a demand for the standard fuel, greater that the supply. The by-product had commenced to assume important proportions in the market.

So in time, the Pennsylvania oil fields, which had been the chief basis of former supply, were exhausted, and other localities were drawn upon to a greater extent than before. To-day, despite the fact that the United States is the greatest oil-producing country in the world, great quantities of naptha are imported from other localities, such as Sumatra and Borneo, in order to swell the volume of the product which even under these conditions threatens to become insufficient to supply the constantly growing requirement.

Just here one of the many peculiarities of the petroleum distillates requires especial emphasis. Though the crude oils themselves closely resemble one another, their chemical composition varies exceedingly. This variability is carried through all the products to a certain extent, so that in the case of the napthas a great amount of difference is observable. It may be supposed that the processes by which the product is obtained are largely the same in all cases, and that were it not for this basic difference in the crude oils, the resulting fractions would be precisely alike in all respects. As it is they vary to such an extent that in their original state they reveal strikingly different properties.

Consequently the production of motor fuel requires a judicious blending of different products in order to secure the volatil and thermal properties which govern its usefulness. In the blending process, specific gravity is entirely ignored. It is the object of the producer to develop a fuel which will evolve a maximum ignition pressure when burned with 85 per cent. of air, and which will flash at temperatures within certain closely defined limits. As a matter of fact, the gasolene in current use is found to vary anywhere from 76 to 60 Baume, which corresponds to a range of from 68.2 to 73.9 per cent. specific gravity. There is also a certain wide variation in the boiling point, which may vary from 120 to 330 degrees Fahrenheit.

It is on this account that the specific gravity test is of practically no value in determining the quality of the fuel. The so-called "Motor Spirit" which may be bought in the open market is intended solely for motor use. That is to say, it is produced with regard to the thermal and evaporative qualities, which govern at once the relative amount of power derivable from it, and the facility with which it may be carburetted and delivered to the cylinder in combustible form. Other gasolenes and napthas, such as are produced with specific regard to the demands of the sundry manufacturing purposes for which they are employed, are produced under similar conditions and their properties from the motorists' point of view must be regarded with more or less suspician.

It is well known that the gas engine will run under certain conditions on almost any

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fuel ranging from crude oil to absolute alcohol. But the most satisfactory supply from the general utilitarian point of view is the specialized product which is offered for the purpose and which, like his tires and his lubricants, the motorist must take at face value, without inquiring or needing to inquire into the chemistry back of them, or their own physical properties. The usefulness of the hydrometer in this connection has entirely passed.

Improved Top for Runabouts.

While the runabout with the double rumble seat has attained a degree of popularity with those who find in this type of car the desirable features of a compact, companionable turnout which may be readily converted into a more imposing vehicle, with accommodations for four persons, there has been difficulty encountered in obtaining a satisfactory top. The principal objection to be overcome lay in the necessity of having something constructed in such a manner that the bows should not interfere with the access to the rumble.

The Rands Manufacturing Co., of Detroit, have solved the difficulty by so arranging the bows that they do not cross the entrance to the rear seats of the car, either when the top is up or when it is folded back in a compact space. The top is attractive in appearance and though light is still very strong and can be readily made rigid when in use.

Street Refuse on the Air Screen.

An annoying condition, which occasionally occurs, in engines equipped with a carburetter having a self contained gasolene and air screen, is first made apparent by the engine running at irregular speeds. For a few yards or may be a block or two the power plant will be giving its full energy, then the engine slows down to almost a standstill and as suddenly will resume its normal revolutions. When this occurs the screen, if removed, will probably show an accumulation of street refuse which has been sucked in through the air intake and packed on the screen, preventing a proper quantity of air from passing evenly into the carburetter. Remove the dirt and no further trouble will be encountered.

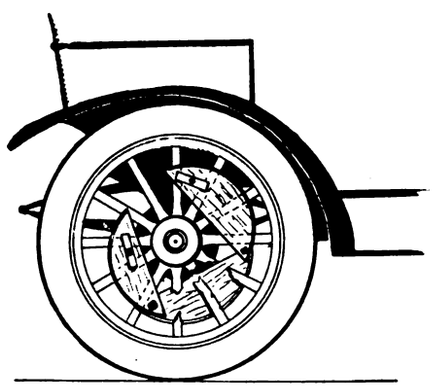
Temporary Repair of Cut Tire Casing.

When a tire suddenly collapses and the shoe is removed to discover the reason for it, there may be found on the inside of the casing a cut which has gone well into the fabric without appearing on the outside of the tire. This may have been caused by an improperly protected lug—one from which the leather covering has come off—having made the cut when the tire was run on while flat. Cover the incision with a piece of leather and no further trouble will be experienced for a time, but unless a replacement is made at the earliest opportunity the tube will again be pinched as the leather will "travel."

BARREL HEADS AND HEAD WORK

Combination that put a Crippled Wheel in Splints—How Some Chauffeurs Can Meet Emergencies.

"I wonder what one of these liveried automobile attendants, whom we frequently see driving cars, would do if his car should skid into the curb and crush in a rear wheel," remarked a man whose extensive automobile interests had offered the opportunity of getting acquainted with most of the conditions and experiences which may be encountered. "Or rather, I don't wonder, for I know; it would be a telephone call for a new wheel or a truck. When you're



CRIPPLED WHEEL IN SPLINTS

all togged out in a fine 'monkey' uniform you can't be expected to do much in the line of roadside repairs; and besides," he added, "the fellows who wear livery are not able, as a general thing, to do much more than drive a car. If they were they would not have to dress like coachmen.

"I saw a thing a few days ago that well illustrates the native ingenuity of some men," he continued. "It was on the outskirts of the city. In making a turn the machine, a runabout, skidded into the curb, and down went a rear wheel with four spokes broken. The chauffeur got out and took a look at the wreck, then calmly lighted his pipe, and I could see he was doing some real thinking while he made a careful examination of the damage. In a minute or two he straightened up, looked up and down the neighborhood, and then made a bee line for a store with a grocery sign above the door. In a few minutes he came back with an odd assortment of lumber under his arm, consisting of barrel heads and box covers, with which he proceeded to get his car into temporary shape for its trip to the garage.

"First jacking up the wheel he forced the rim back to as near its original shape as possible, then a half barrel head was placed on the outside of the wheel and two others like it were placed on the opposite side in such a position that the points of the two met and overlapped the one in the center, that is the pieces alternated, one on the outside of the wheel overlapped the one on the inside, which was in turn lapped by the third one. Bolts were forced through all these and when the nuts were tightened up the board in back, which covered the space where the broken spokes were, was drawn tight as possible toward the other two boards, which were against the good spokes, and the whole formed a pretty substantial brace which permitted of the car being driven home under its own power. It was one of the cleverest roadside repairs I've ever seen."

Started His Fire with Gasolene.

An incident, which fortunately was funny, though it might have been extremely serious, occurred during a recent cold spell in a private garage which has as an adjunct a well equipped repair shop in which a mechanic and a German helper are always busy caring for the seven cars which comprise the family's automobile equipment.

For reasons which no sane man can understand, the garage and shop were heated by stoves, and it was a part of the helper's duty to attend to the fires. One cold morning when he arrived he found the big stove cold and the fire out; he quickly prepared the paper and wood and, to get quick action, added a generous sprinkling of gasolene. Had he lighted it at once all would have been well, but he was called away, and about ten minutes later returned and applied the match. In an instant there was a roar, the top of the stove went up and the doors blew out, while a sheet of flame enveloped the stove and rose almost to the ceiling.

In some miraculous way the helper escaped without injury, and no damage was done, save to the stove, which was destroyed, and to the helper's nervous system, which received so severe a shock that it was depicted on his countenance and was further manifested by an outpouring of German invective which furnished what proved to be the humorous feature of a serious experiment.

Why Noises Should not be Ignored.

Though the noise made by the vibration of some unimportant part of the equipment—such as the glass of an oil light for instance—is annoying, it is often considered too trivial to be given immediate attention, and it is permitted to continue until an entirely convenient moment is at hand or until it is repaired for lack of something else to do while "killing time." Such a detail may be unimportant to the general running of the car, but the habit of letting things go until "to-morrow" is one easily formed and for a driver to accustom himself to unnecessary noises and to become so hardened to them that he doesn't "bother" to correct them, means that he is subjecting himself to a condition, and putting himself in a position where he will soon cease to give heed to warnings which portend more serious disarrangements with consequent expensive results.

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SAMPLED ROADS OF ALL SORTS

Johnson's Circuitous Trip from New York to Savannah—Ten States Visited in True Touring Style.

One of the longest tours of recent years has just been successfully completed by R. H. Johnson, a member of the Touring Committee and of the Good Roads Committee of the American Automobile Association. Mr. Johnston drove his 30 horsepower White steamer from New York to Savannah, by a circuitous route, passing through ten states and covering a total distance of 2,044 miles. Mr. Johnston summarizes his trip as follows:

"We started from New York, not with the intention of doing any sensational stunt, but with the purpose of finding a good touring route between North and South, and to do what little we could to forward the good roads movement. We were not concerned with finding the shortest route, but our idea was rather to see as many places of interest as possible. We first proceeded to Philadelphia and from there to Harrisburg. Here we turned southward and passed through Gettysburg, climbed the Blue Ridge, and continued on to Hagerstown, Maryland. Here we again turned westward and journeyed to Cumberland where commences the old National highway. We followed this one road a total distance of 320 miles, first over the Allegheny Mountains, where we had many climbs of one, two and three miles, then through Wheeling, W. Va., and Columbus, Ohio, to Springfield. Here we turned southward through Dayton to Cincinnati. Then we had a delightful 300 mile trip through Kentucky, where we found many more miles of good roads than we had anticipated. We visited Lexington, the center of the famous blue grass, horse raising section; Frankfort, the picturesque capital of the State, and Louisville. At Frankfort we met William J. Bryan, who rode with us for a short distance and who expressed his sympathy with the good roads movement.

"South of Louisville the roads were rather rough, but the going was not particularly severe, except on the 25 mile detour we made from the main route in order to visit the Mammoth Cave. The next large city which we visited was Nashville, Tenn., and then we were agreeably surprised to find a toll road from that city to the Alabama line, 100 miles to the south. We continued due south until we reached Huntsville, Ala., where we turned east. Thereafter, we had some very bad mud, due to the abnormally heavy rainfall, but we kept going and reached Chattanooga in good season, crossing the Tennessee River on a flat-bottomed ferryboat, propelled by two oars.

"We next climbed Lookout Mountain, visited Missionary Ridge and the battlefield of Chickamauga, where there is a most imposing array of monuments, some for the Blue and some for the Gray. From Chattanooga we proceeded almost due south through Rome, Cartersville, and Marietta, to Atlanta, and from there to Macon.

"The trip from Macon to Savannah was by far the hardest portion of the journey. The roads are hardly more than trails through the sand, which becomes heavier as one nears the coast. But the principal reason why few automobiles ever attempt this trip, even at a more propitious time of the year, is because almost all of the streams are without bridges. Even those streams which have bridges, must be approached through water, as the bridges are built only over the deepest parts. As we made the trip after a season of heavy rain, it can be imagined that we had to do some rather sensational fording. Often the water washed over our big 36-inch wheels. Several times our burner was extinguished. But this did not bother us, as we always had a reserve supply of steam in our generator sufficient to carry us to terra firma. We were almost three days in making the 200 miles between Macon and Savannah, which was by far the slowest progress we made on any part of the tour.

"Our total elapsed time from New York to Savannah was three weeks and five days. It should be noted that we were not out for records, but took time to see all the places of interest in or near our route. As is evidenced by our continuous progress, we had no trouble with the car, and our tire troubles, despite the severe character of much of the road, were almost negligible.

"I think I may safely say that during the trip we had every known kind of weather, ranging from the blizzard we experienced in the mountains near Uniontown, Pa., where we could hardly see the road a yard ahead of us, to the delightful sunshine of Georgia, where we discarded coats, gloves and even hats. Furthermore, if there is any kind of road which we did not find during our 2,044 mile journey, that kind must be something better than the magnificent government road which runs along Missionary Ridge. I do not believe that anything can be worse than the occasional patches of quicksand in southern Georgia, the black bottomless mud of Jackson county, Ala., or the grades of stratafied rock leading to the Mammoth Cave."

Paris Horse Census Shows Decline.

An indication of progress, which doubtless will be eagerly grasped by the prophets of a "horseless age" is that revealed by the falling off in number of horses used in Paris. In the last ten years this has amounted to exactly 10 per cent. In 1897 the equine census revealed a total of exactly 92,026 head of horses, while the corresponding figure for 1907 was only 83,458. In the 8th "arrondissement," the Champs Elysees, the drop amounts to 50 per cent.

NOT REALLY BIRDS OF A FEATHER

But the Chauffeur Who Tried to "Flock" with the Millionaire Didn't Know—Where Extremes Met.

The cold wind "howled dismally" around the vicinity of Forty-second street and Broadway. It also "howled dismally" elsewhere. The cold wind usually "howls dismally" or "bitterly" in Ouidian novels.

In front of the $1,000,000 lobster palace stood two cars. One was a $10,000 car with a $5,000 body. The other was a $2,000 car with a $346.98 body. In front of the $10,000 car with the $5,000 body stood a young $1,000,000,000-aire. He felt that life had its compensations, after all, for he had just eaten a $1,000 dinner, with $50-per-bottle wine as a side drink. An $8,000 fur coat, $300 fur cap and $250 fur gloves protected him from the cold winds that "howled dismally." Ever and anon he removed the $100 perfecto from his lips to insert a 24-karat gold toothpick, lest a visage of the $1,000 dinner should remain. He was waiting for Mrs. $1,000,000,000-aire, who had stopped to speak to some friends.

In front of the $2,000 car with the $346.98 body, stood a very ordinary chauffeur, in a "goat fur" coat, and a 98-cent cap purchased from a cut-rate bargain store in the locality. His gloves were not fur, and he stamped his feet and swung his arms vigorously in a vain effort to induce circulation. He was only a poor chauffeur, and had not had anything heavier that coffee and rolls since morning; it was now nearly 4 o'clock. He waited for his employer who was within the $1,000,000 lobster palace.

Finally the Very Ordinary Chauffeur walked over to the Befurred One, and said:

"Say, Bo, you must be in soft. Whose car 'ye drivin', anyway?"

Thus is it made plain that men are not always what they seem; also is it illustrated how pride may be humbled.

Automobile Rule Applied to Camels.

In America it is the automobile which the authorities insist shall travel only at a moderate speed, besides being provided with light and sound producing appliances, but on the sunbaked promontory of Aden the corybantic camel has come in for speed restriction. According to report an order has been issued in Aden that "all camels going beyond a walking pace after sunset must be provided with a bell." Those who have never beheld the camel when his foot is on his native heath, or rather sand, can hardly grasp the idea of the unwieldly Bactrian being induced by any conceivable means to get up a speed faster than that of a ponderous Broadway "cop." The real reason, however, is that the animal's feet are so big, soft and clumsy that they make practically no noise.

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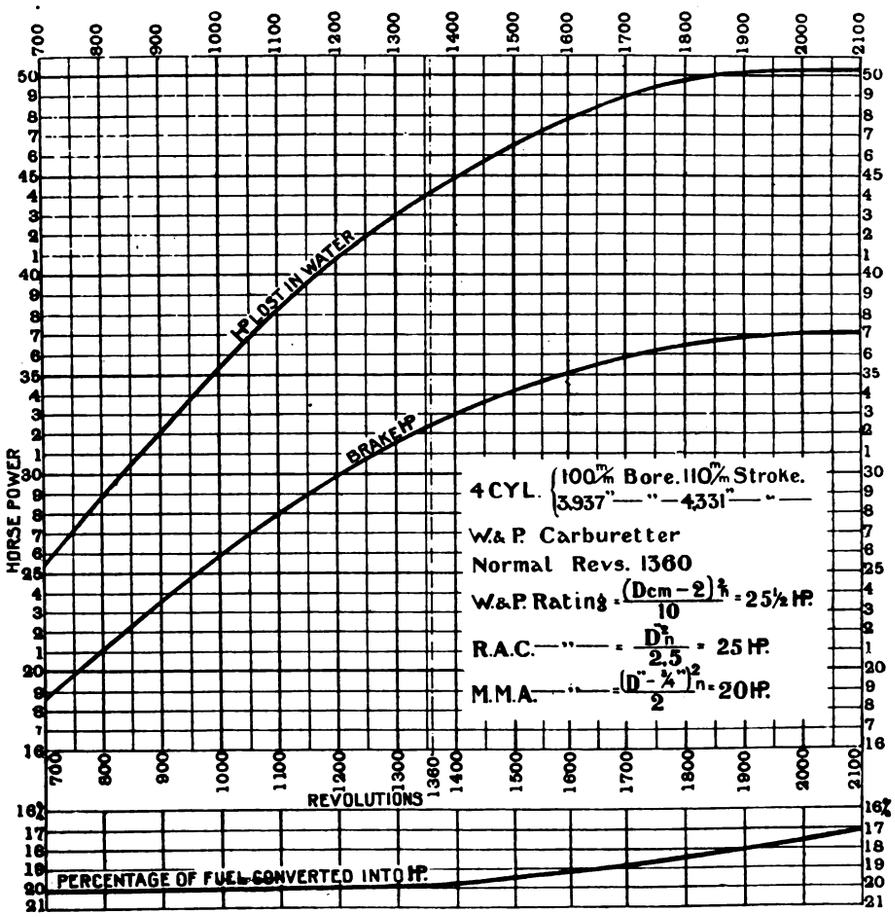
POWER WASTE IN CYLINDER WALLS

Its Proportion to the Amount Developed Charted from Tests—How the Results were Reached.

It is quite generally understood that of the total power developed by the burning gas within the cylinder a large proportion goes to waste, the principal sources of loss being the exhaust and the cooling water, or, in the case of the air-cooled motor, the air immediately surrounding the radiating flanges on the cylinder. In fact, it is unquestionable that in many instances, the amount of loss localized in the cylinder walls even exceeds that from any other source, nearly half the power developed actually being wasted in heating the jacket water in some instances of poor design, while frequently more power is lost in this way than is converted into work.

The relation between power developed and power lost is in no way better illustrated, than by means of a graphic table, like the accompanying, which shows at once the power developed at the fly wheel throughout the speed range of the motor, the power lost through the cylinder walls, and the thermal efficiency of the motor. The third curve, represents a concise summary of the results expressed by the other two. The upper of the two first-mentioned curves showing the loss through the jackets in terms of horsepower, as compared with the second—the power developed at the fly wheel—makes an impressive showing.

The diagram is based on a series of tests conducted by White & Poppe, Ltd., Coventry, England, upon one of their own four cylinder vertical engines, measuring 100 by 110 mm. The curves, and the following outline of the method of test, as published in the Autocar, show that the results are closely checked, and authentic. The actual efficiency under the various conditions of speed and load shown by the test, of course appertains only to this engine, the object of the trials being merely to establish in a general way, the relation between power developed and power lost through the walls. This factor, however, may be taken as fairly representative of the results obtained ordinarily in current practice.



"The engine was mounted on a test stand and fitted with air braking vanes, so that when the engine was run at a certain speed the horsepower was definitely known without calculation," says the authority quoted. "The accuracy of this method of testing was in the first place determined by an electrical checking method, so that any error could not come into the observations. Water was circulated through the jacket of the engine, and the amount passed through in a given time was carefully measured. A thermometer placed at the inlet and outlet pipes to the water jackets indicated the initial and final temperature of the cooling water. The rise in temperature, taken in conjunction with the amount of water passed through in a given time, gave the means of calculating the work lost or absorbed in the cooling water.

"Tests were made of the engine running light when electrically driven to ascertain the frictional resistance of the engine itself. The losses in the exhaust gases were not directly taken, but calculated after the brake-horsepower and the cooling water power absorbed had been determined. The difference, of course, is due to engine friction, radiated heat, and exhaust gas losses.

"The petrol employed had a density of .72, and through the experiments the approximate petrol consumption was .72 pint of petrol per horsepower per hour. The heat value of the 'petrol' was practically 11,000 per kilogram, and one calorie was taken as 424 kilogram-metres. Calculation showed the theoretical horsepower to be 5.1 horsepower for each useful horsepower developed. The efficiency, therefore, of the engine was 1/5.1, or practically 19.6 per cent. . . . .

"The normal engine speed of this particular type of engine was 1,360, and at this speed it will be noticed that the brake horsepower curve indicates about 32½ horsepower, whilst the horsepower lost in the water is no less than 44 horsepower. As a matter of fact, if the whole of the fuel employed was turned into useful work, assuming very small engine friction, and that nothing was lost in the cooling water and the exhaust gases, the actual horsepower developed by the fuel consumed at a speed of 1,360 crankshaft revolutions would be something over 160 horsepower. . . . .

"The lowest of the three curves gives the percentage of the fuel converted into horsepower. It will be noticed that as the speed increases the percentage of fuel converted into horsepower decreases, and this might only be expected, because as the speed of the engine increases the compression becomes slightly lower, owing to the fact that the cylinder is not completely filled at each stroke."

Systematic Inspection of the Car.

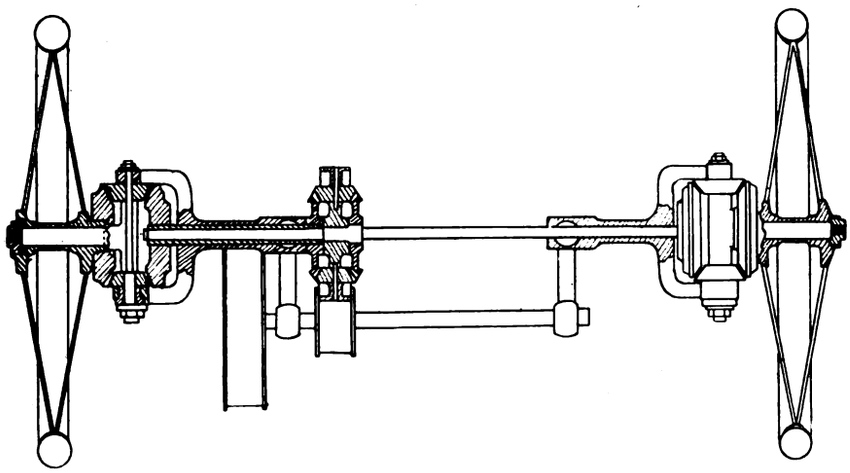
While a general inspection of the entire car at frequent intervals is always advisable, it is well also to make a systematic investigation with a definite purpose in mind. For instance, look at every nut on the car to see if those which should be protected from coming off by a cotter pin always have this little detail and where it has fallen off, or been neglected, supply the deficiency. And again, look for loose nuts and have a wrench in hand to try each of them. In making these specific searches one will notice other things which are to be corrected, while a general investigation may often fail to discover the disarrangement of minute details which, though small, are of great importance.

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AXLE PROBLEM IN FRONT DRIVE

Some of the Solutions and Wherein They Fail—Application of the "Jack-in-the-Box" Idea.

However satisfactory the principle of driving and controlling the vehicle by means of the front wheels may be in theory, the fact remains that in practice it is very difficult of achievement—at least according to present notions of structural requirement and possibility. In such electric systems as permit the mounting of the motor directly in the wheels, or in the scheme of the "gasolene wheel," which was developed experimentally several years ago, the problem is rendered comparatively simple. Where the motor is located in the chassis so that it is necessary in addition to transmitting the power to the driving wheels and making some provision for differential motion between them on turns, to allow for the deflection of the wheels without interfering with the driving function, the maximum complication of requirements exists.



The most natural way of attacking the problem from the standpoint of present design, is to construct the axle practically as though it were the ordinary live rear member, except that the wheels are mounted on steering knuckles, and the driving shafts are connected to them through universal joints. Several objections to this method arise, however, notably owing to the variable velocity and resistance of the universal joint when operating under conditions of wheel deflection. A part of this objection may be overcome by doubling the joints in each of the individual driving shafts, but this involves the objection of adding to the mechanism, introducing also, lost motion, friction and liability of breakdown in the ratio of two to one, theoretically at least.

A more obvious method, and one which from the theoretical point of view is far more desirable since it permits the deflection of the steering wheels to take place without affecting the driving function of the axle, is applied in one of the pioneer inventions of this class, that of Messrs. Lacoste and Duncan, which was granted an English patent as long ago as 1896. It consists merely in the manifold application of the principle of the common bevel gear differential or "jack-in-the-box," as it is sometimes familiarly known. The differential balance gear is mounted in the driving shaft as usual, while at either end of the axle is mounted a second differential group in which the usual "floating member" carrying its two bevel pinions, is made the steering pivot, while one of the two larger bevel gears is affixed to the end of the driving shaft and the other mounted on the wheel. The accompanying illustration shows the arrangement in somewhat idealized form.

The driving force is transmitted to the wheel through the intermediary of the pinions, which incidentally reverse the direction of motion, thus necessitating the backward rotation of the driving shaft for forward motion of the vehicle. The extreme nicety of the arrangement, however, exists in the provision which it makes for independence of the steering movements of the wheels. Supposing the vehicle to be stationary for the moment, it is evident that as the wheels are swung from one "lock" to the other, they must roll about the pivots, even though cambred in such a way that their points of contact with the ground are central and stationary under these conditions. In the arrangement under consideration, the wheels are set perfectly vertical so that in swinging into or out of lock they roll. The driving gear, however, is not affected by these movements. If it makes no difference which way the wheels are swung when the driving gear is at rest, naturally, it does not affect the driving function if they are swung when the vehicle as a whole is in motion, so that the complete disassociation of the two purposes is accomplished.

Judged on the basis of present driving systems, this arrangement is obviously crude and over complicated. Regarded as a study in design, however, it is highly interesting and suggestive. Several other methods of front driving and steering were contemporaneous with this arrangement, notably that covered by the Sydenham patent of the same year. For the most part they were too crude to be considered at all seriously now, however. An example of this early development which was extremely simple, but equally impractical from the present point of view, was that of employing a swinging front axle of the live type, carrying a differential balance gear the motion of which was controlled by a pair of brakes. Applying one of the brakes, retarded the wheel to which its side of the differential was connected, correspondingly advancing the other, and so swinging the axle. It is not surprising to learn that this system was not sufficiently "sensitive" to permit of continued use, or that other drawbacks arose which served to discontinue its use. Considered in the broadest possible way it appears that front actuation and control is sufficiently desirable to warrant a general renewal of attention. This is particularly true in the case of the commercial vehicle.

Special Ammeter for Testing Coils.

Attention directed to the fact that with the ordinary type of multiple vibrator spark coil, it is practically impossible to obtain absolute synchronism in the ignition by the ordinary methods of adjustment in which the eye and ear alone are employed in judging the quality of the spark, has brought out that the Connecticut Telephone and Electric Co., Meriden, Conn., are marketing a special, low-reading ammeter, termed a coil current indicator, which is made for exactly this purpose. It may be connected to any of their coils by simply "plugging-in" to one of their regular switching jacks, and gives a close registration of the consumption, thus furnishing an ideal check on the adjustment. The use of a special ammeter constructed for the purpose, is particularly helpful in this connection, as was pointed out, since by testing the current in the primary circuit it is possible to determine the exact consumption of the coils for various adjustments of the vibrator.

Water Cooled Crank Case and Gearset.

Water cooling for the crank case of the motor and the transmission gearset, has not been heard of hitherto, nor would it generally be thought necessary. A system designed to effect this, has recently been devised and patented, however, by the Daimler Moteren Gesellschaft, fountain head of all the Daimler and Mercedes products. The water is circulated first through the jacket surrounding the gearset, then around the motor crank case, and then through the cylinder jackets, after which it passes through the radiator before returning to its original path. The object is to prevent any rise in temperature due to possible excess of friction; and also to preserve a uniform temperature under all possible conditions.

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EFFECTS OF COMPROMISE ON DESIGN

How the Practical Medium Between Extremes is Developed—Examples in the Evolution of the Automobile.

While the evil of going to extremes is equally apparent in all things, it is nowhere better emphasized than in the realm of mechanical engineering, the principles of which closely hedge round what is broadly known as "practice." Still it is rather an unusual notion that in consequence of this, practice is nothing more nor less than an array of compromises, sanctioned by usage and common consent. In this connection a foreign authority points out a number of instances illustrative of the way in which just this effect is produced by the conditions limiting the designer of the motor car.

"It is doubtful if even the designer himself thoroughly realizes the important part which 'compromise' plays in his designs and of the many others interested in automobilism few probably have given the matter much thought," he remarks. "Let me make my meaning clear, and I shall be able to do this more easily by selecting some 'detail' for discussion. A connecting rod comes to my mind as being, perhaps, as good as any.

"How does compromise affect this particular part? Suppose we imagine a rod of extreme length coupling the piston to the crank pin. We should in this case get practically no side thrust at all on the piston, for the rod would at all positions of the revolution of the crank occupy a position nearly parallel to the axis of the cylinder, and from this point of view such a rod would be ideal. It is easy to see objection, however, to such an arrangement. The rod would be excessively heavy, the overall length of an engine so fitted would be great, and expense of production would be proportionate. On the other hand, we might employ an exceedingly short rod, or, say, one equal to about the length of stroke of the piston; hence we should get enormous side thrust, and consequently wear and tear, on the piston and cylinder walls. Such a rod would, however, be light, and therefore suitable for an engine having a high speed of revolution.

"Hence we observe that it is necessary to compromise between the two extremes and steam engine practice in this case, many years before the introduction of the petrol motor has decided this 'happy medium' for us. . . . .

"Let us take another case and discuss it in the same fashion, and this time we shall select a part where the points to be considered are more numerous. A rear road wheel fulfills these conditions well. In the automobile of ten years ago it was customary to use considerably larger wheels than is the case at the present day, obviously owing to the use of them on horse-drawn vehicles. Various objections to large wheel diameters, however, present themselves to us. Firstly, it is not easy to reduce the speed from the engine to the road wheels to a sufficient degree without entailing big frictional losses in the process; secondly, the cost of a pneumatic tire of such a size would be great; thirdly, it is more difficult to build a large diameter wheel of sufficient strength for automobile purposes; and, fourthly, a large wheel practically necessitates a high, and therefore unstable, car. It appears that we can only put one advantage against these four objections. This advantage is, however, a considerable one—a large wheel conduces to very easy riding and reduces road shocks. We should, perhaps, add that a tire fitted to such a wheel would last longer, on account of its fewer number of revolutions per mile.

"Taking the case of the very small road wheel, we shall find that a small wheel increases the traction force necessary, especially over rough roads; that it puts more work on to the springs, and that it necessitates various parts of the chassis approaching perilously close to the road. On the other hand, the small wheel is cheaper to build, and its tire is cheaper than that of the large wheel. Fortunately for the tire manufacturer, the problem of wheel diameter has been boiled down to one or two sizes, but this boiling down process amounts to a system of compromise. . . . .

"There is, indeed, hardly a part of the modern motor car which has not at some time or another been subjected to this compromising process. Experience proves a part too light, we strengthen it; too short, we lengthen it; and so we proceed till eventually we arrive at a correct size and strength, which, forgetting the system of change which has brought us to it, we are apt to regard hereafter as fixed and unalterable."

Best Method in Tightening Chains.

It is a common practice to "jack up" the car when chains are to be tightened, and while this permits of the wheel being turned so that the chain may be "felt" in all positions of the sprockets, it bears little or no relation to the condition in which the chain will be when the car is again resting on the ground. The only safe and sure way to make chain adjustments is to do it with the car standing in its normal position and after tightening or loosening the strut rods push the car about the floor, constantly lifting or trying the chain, so that "high spots" in the sprockets may be provided for. In this way there is little danger of getting a chain too tight, which condition is far more serious than having it too loose, as the strain on the jack-shaft will result in worn bearings, if not the more serious mishap of springing the jack-shaft. Care may kill a cat, but extreme care makes just the difference in an automobile that lies between big upkeep expense and necessary outlay.

WHERE THREE WHEELS SERVE BEST

An Observer's Views on Transportation Conditions in Egypt—Advantages of Single Wheel Drive.

Whatever may be the characteristics of the motor vehicle as finally developed from its present tentative condition, it is plain to see that no absolutely fixed standards of construction can be applied to it in all of its possible applications. Special uses require special adaptations, and it will not be surprising if the business and pleasure cars of the future exhibit far greater structural differences than is the case to-day. In this connection the observations of a student of transportation conditions in Egypt are of interest, because it is his judgment, based on a number of years of direct experiment, that for use in the desert and in countries where practically no roads exist, the three-wheeled tractor, and the two-wheeled trailer are the most acceptable vehicles for motor haulage. In explanation of this apparently wild conclusion he gives the following arguments in favor of three-wheeled traction under the conditions here noted:

"1. With three wheels there is a three-point suspension on the road.

"2. The power being applied to the rear wheel in the middle of the frame, gives a direct application of power along the center line of traction, and all energy is directed along that line.

"3. The weight on the driving wheel can be easily regulated to give the requisite amount of road adhesion according to nature and surface of track.

"4. There is no complication of differential gearing, as is required when conveying the drive through the two rear wheels of an ordinary car, and none of the attendant strains of driving first on one side wheel and then on the other, according to the nature of the track.

"5. The simplicity of gearing between the engine and the driving wheel.

"6. The single wheel drive enables a driver to select the hardest part of the track for his road or driving wheel.

"In place of four-wheeled trailers and the consequent limit of wheel diameter for steering lock on short turns a two-wheel trailer with long platform and large diameter wheels is found to be more suitable for negotiating either soft or rough ground, and this type of carriage manoeuvres much more easily on awkward bends. The two-wheel cart for heavy transport is no new idea," he concludes, "and is in regular use in Southern Europe, giving every satisfaction on heavy draft work with horses."

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

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JONES PRODUCES A TAXIMETER

First American Fare Recorder Has Special Features—Variety of Records and Safety Against Tampering.

While this country has not been slow in adopting the taximeter vehicle, practically all of the "fare recorders" employed have been importations, as no American inventor who has been actively interested in producing the indicator has offered his device for general use. But the matter has been receiving careful attention from at least one American and Joseph W. Jones, whose speedometer is so well known, now has placed on the market an instrument to be known as the Jones taximeter.

This latest addition to the Jones line is an instrument about 7 inches in diameter by 4 inches thick. The dial face is of silver with figures indicating the rate or tariff, the total fare to be paid by the passenger and a separate indicator for extras. On the reverse side is another dial on which is indicated the total sum paid to the driver, the total mileage and a trip mileage, which latter can be reset by the operator at any time. There is also a record of the number of trips with single and double tariff.

The meter is arranged to display a "Vacant" sign which is thrown to the right, into a horizontal position when it indicates on the dial tariff (1) and at the time indicating an initial charge of 30 cents for the first half mile, when a passenger enters the vehicle. After this distance has been traveled an additional charge of 10 cents for each quarter mile is added to the total. Trunks and other baggage for which a charge is made, are recorded by turning a knob which controls the "Extras" dial, and adds the sum recorded to the "Total Fares."

The meter is constructed so that if the "Vacant" sign is thrown to the left until a horizontal position is obtained, the same initial charge is recorded, after which there is an additional charge of 10 cents for each one-sixth of a mile, in this way covering the cost of 4 or more passengers.

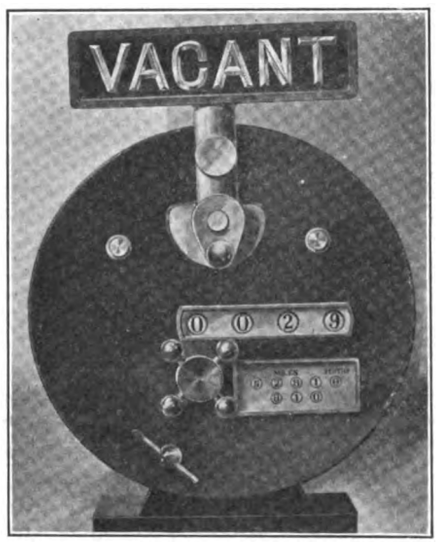
The taximeter contains also clock mechanism which, when the "vacant" sign is down and the vehicle standing, causes a charge of 10 cents to be registered for each 6 minutes of waiting; this charge being added to the total. This is all arranged mechanically so that the driver has no control over the instrument except to start and stop it. On the passenger leaving the vehicle the driver throws the "Vacant" sign to a vertical position, resetting the figures under "Total fares," and turning the "Extras" to 0.

The instrument is also arranged so that it cannot be tampered with or put out of order, or the "Vacant" sign or extras changed while the driver is absent. This arrangement is necessary for the reason that maliciously inclined persons might change the tariff or ring up extras which, of course, the driver would have to account for to the company. In fact there has been some little trouble in this connection on account of the existing jealousy between the horse cab drivers and the "taxi" cab drivers. The "taxi" cabs being smarter and



more popular have been getting the bulk of the trade. When a "taxi" cab driver leaves his car for a few minutes, the horse cab driver rings up a few extras, etc., which makes the "taxi" that much out of pocket. To overcome this objection some of the cab drivers have arranged a small padlock on the taximeter, which, however, does not add to the appearance of the instrument.

Jones taximeters are now being manufactured, and will be leased to operators of taxi" cabs, horse cabs, etc., and the Jones



company attaches, repairs maintains and guarantees the instruments. It is believed that this is the only satisfactory method on which to operate the instruments. The inventor expects to visit Europe in the spring to introduce this taximeter and to dispose of the European patent rights.

ONLY A BIT OF BARE WIRE

But It Cost the Chauffeur a Long Search—One of the Many Elusive Causes of Motor Trouble.

"I think the hardest problem in automobile troubles that I ever encountered," said a professional driver whose years of experience entitled him to be heard with attention, "came to me one afternoon as I went out of the garage with only time enough to meet the owner as ordered and with no leeway for punctures or anything else. I started with everything working in fine shape, but when about two blocks had been traversed the machine slowed down and seemed to lose power with ever increasing rapidity. I headed back for the garage and could barely make it on first speed.

"The first symptoms were the same as would have been encountered with worn out piston rings letting the mixture into the engine base when the heat of the engine had made the oil thin, as we generally express it, but I knew that my engine was in prime condition and immediately eliminated that possibility from consideration and turned to the battery. A meter showed that I was right; the battery was way down; so I put in fresh cells and started again. I had not gone a block when I found the same condition to exist.

"Of course I was guessing. There was no use of looking at the timer except for short circuits, so I made a careful examination with that in view and satisfied myself that all the contacts there were well protected. The secondary circuit revealed the same satisfactory condition, the vibrations on the coil buzzed as they should buzz, and the battery connections were perfect—yet I had too little 'juice' to get explosions before the piston was way down; not enough spark to fire one compression.

"Again I put in fresh cells which I first tested with a large meter that I knew to be in perfect condition. The battery was all right, yet a little running on the floor weakened it perceptably and I was certainly stumped. I thought that it must be in the coil, yet when the plugs were laid on the cylinders and the engine turned over a fine spark resulted.

"I worked on that problem for nearly two hours. At last when tired and disgusted, the solution was found. A bit of insulation had worn away from one of the primaries on its under side just where it passed over the metal piece to which was attached the vibrator spring and this permitted a continuous flow from the battery—a direct circuit. The end of the wire was connected on the bridge and by its contact with the metal support of the vibrator a divided circuit was established permitting an abnormal consumption of current."

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WHERE KNOWLEDGE IS REAL POWER

Guesswork Apt to Make as Many Troubles as It Mends—Some Suggestions for the Driver.

In the not distant past it was a common sight to see an automobile drawn up by the roadside, a miscellaneous assortment of tools beside it and the driver distorting himself into various attitudes, wonderful to behold, seeking the seat of the trouble that caused the delay. These sights are now rare, thanks to the improvements that have been made in construction, but more especially because of a general knowledge of the functions of the different parts of the gasolene engine.

While it is true that most drivers are able to diagnose symptoms and locate any disarrangement in a very few moments, it is equally true that there are many who are possessed of only a superficial knowledge of the construction of their power plant, and when something goes wrong it is more luck than good management if they succeed in remedying the difficulty.

Of course the advice to this class is to learn all about their machine, as there are few disarrangements of the mechanism that are not easily adjusted, if one but knows where to look for them. The man who trusts to luck usually goes from one thing to another without rhyme or reason; he tightens nuts or changes adjustments with a vague hope that by some stroke of fortune he will hit on the right thing. Generally he does hit on it, but not until something else has been put out of commission by his unintelligent tinkering, with the result that when he attempts to start the engine—which had stopped, say, for instance, because of a loose battery connection—it fails to run because he has spoiled the adjustment of vibrators while looking for the initial trouble. He finally gets the machine running, but when similar symptoms are again apparent, the same lengthy investigation must be indulged in.

A good rule to follow is to never turn a screw unless you know why you are doing it. The policy of "guessing" makes far more trouble than it corrects. Every part of a gasolene engine has a definite purpose; and to alter its position, without having a thorough understanding of its functions, is simply to invite trouble. Do one thing at a time, know why you are doing it, and then try results before looking further and you will learn the significance of the different symptoms and be in a position to make all necessary adjustments or corrections in the least possible time and at the least personal inconvenience.

Glidden in Land of the Pharaohs.

Recent and contemporaneous part way round the world tours to which the automobile is more or less accessory have served to eliminate pretty largely from the popular mind interest in the only original globe girdling motorist, Charles J. Glidden, who probably would have been totally forgotten long ago did he not occasionally return to civilization to inform its peoples of his progress. Races from anywhere and nowhere to Paris do not affect Mr. Glidden's progress in the least, however. He is at present "doing" Egypt, with the Holy Land in immediate prospect. His present travels total 42,367 miles, and he plans to add another 2,000 miles to it before this stage of his peregrinations is concluded.

It is worthy of note in the light of other and more theatrical world touring ventures, that the Glidden junket is purely a pleasure exploit. When natives are hostile or roads are particularly rough, the Glidden party takes to boat or rail, or whatever happens to be the most comfortable mode of travel, while the car is sent around the other way, or packed along with the family luggage to some point where it may be put again in commission to add to the owner's world knowledge and automobile mileage.

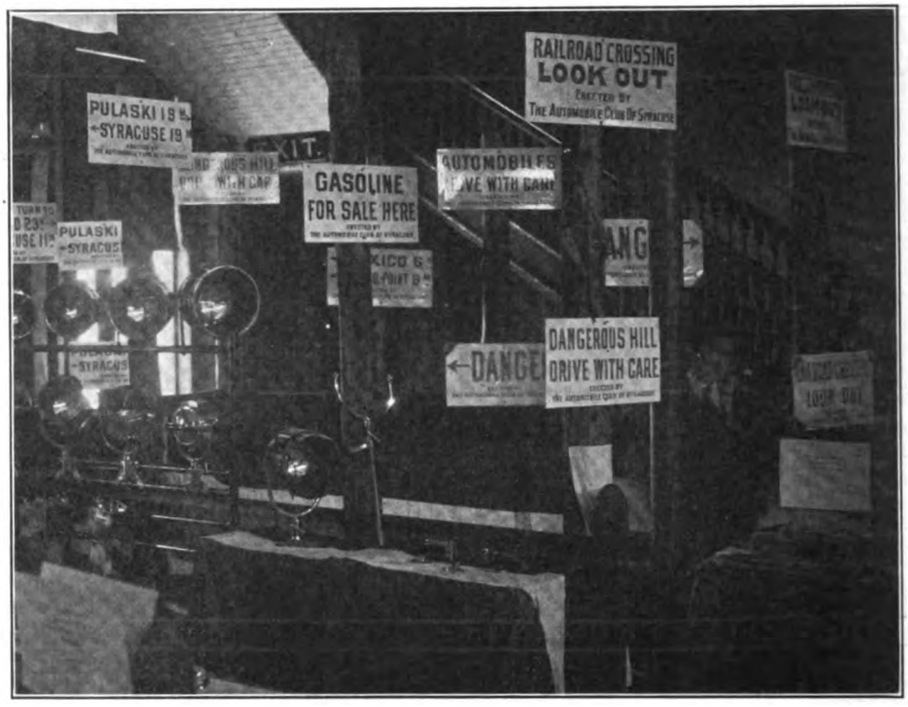
Chauffeurs' Union Claims 978 Members.

The Chauffeurs' Protective Union of Greater New York has elected officers for the ensuing year as follows: President, A. Rogers; vice-president, C. Pollock; recording secretary, F. Kiernan; treasurer, Albert Oliver; board of trustees, John Harvey, three years; J. Brady, two years, and T. White, one year; business agent, J. Murphy. The organization was started a year ago with 265 members and now numbers 978, or at any rate that is the number given out for public consumption.

ROAD SIGNS OF THE RIGHT SORT

Placed for Guidance and Warning by the Automobile Club of Syracuse—Their Character and Variety.

With signs to the right of him, signs to the left of him, signs right in front of him, guiding his course, there is little excuse for the tourist, even "the stranger in our midst" encountering an unexpected condition or being required to seek information additional to that found on the signs which have been erected on guide post, telegraph pole and buildings along the roads in the vicinity of Syracuse, N. Y.



DISPLAY OF ROAD SIGNS AT RECENT FRANKLIN SHOW

With enterprise which is to be highly commended the Automobile Club of Syracuse have placarded the highways with signs which give warnings of dangerous curves, steep hills and uncertain roadways and with instructions as to where gasolene may be found, trolley and railroad crossings encountered; distances from place to place are given while arrows point out the roads. Local speed ordinances are proclaimed and the needs and desires of the automobilist are anticipated and the ways of obtaining them pointed out "so that he who runs may read."

These signs were displayed at the recent Franklin Show in Syracuse where they were grouped, as shown in the illustration.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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DEFENDS "SIX DAYS TICKET" IDEA

Commissioner Smith Discusses Constitutionality of Jersey's Proposed Tax on Non-resident Automobilists.

Study of the proposed changes in the New Jersey automobile law has led persons both within and outside that State to the conclusion that a special license for non-resident automobilists would be against the constitution of the State, falling under the head of special or class legislation. The issue has come to the attention of Commissioner J. B. R. Smith, who had the following to say in relation to it when the matter was broached in a newspaper interview:

"There has been much adverse talk in connection with the section of our law which provides that automobilists from New York or other States who use our roads are obliged to pay a license while in this State, regardless of the fact that they have already been licensed by payment of the fee required by their native State or States. Most of the criticism has, of course, been on the part of the foreign automobilists, or residents of other States, who can not see why they should pay two licenses for operating their machines, even though they do cross a State line in their travels. Some of our New Jersey automobilists take the same position because New York and other States do not charge them an additional fee if they have paid a license here. On all sides one great, important fact in connection with this particular phase of the automobile problems of legislation seems to have been forgotten. It is that our State Constitution inveighs strongly against special or class legislation, and that in the event of New Jersey exacting a license fee from its own resident owners and users of automobiles and not from foreigners resident or other States) who come into our State, such action could be upset by any New Jersey resident who cared to test its constitutionality. To me, and to others who have made the subject a study, it seems that for the State to specifically exempt foreign automobilists from a license fee, or to permit them to go free from such a tax without any legislation upon the subject, would be distinctly class or special legislation. It would be discrimination by the State against its own residents and in favor of visitors and would, to my mind, be clearly unconstitutional. Neither would it be fair, even if we waive the constitutional inhibition for argumentative purposes, because there are hundreds of New York and Philadelphia men who have summer homes at some one of the many resorts of world-wide reputation, along the New Jersey shore of the Atlantic, in which their families spend from four to eight months of each year, and to and from which they make daily trips in high power automobiles. They enjoy the trips from city to seaside in the evening and from shore to business in the morning by automobile vastly more than making the journey twice a day by boat or train. Besides, the trip can be made at any time and the owner need not bother about time tables or schedules and has only his own convenience to suit. He uses the excellent roads of New Jersey probably more than the automobilist who lives on or adjacent to those same roads and the State holds that it is but just and equitable to exact from him a license fee to be used for the up-keep of those roads."

Speaking of automobile legislation in general, Commissioner Smith expressed the opinion that as yet it is in an embryonic state throughout the country and said that eventually the whole subject will be regulated satisfactorily for all concerned. "I am of the belief," he said, "that we are as yet merely feeling our way toward the proper and generally satisfactory laws which will eventually result. They can not come in a day, nor at the very beginning, because various propositions must be tried out in a practical way before their strong or weak points can be determined and necessary amendments or corrections agreed upon. As the head of the State department having direct charge of the matter, I am ready at any time to give anyone an opportunity to take up any part of our automobile laws, either in court or otherwise, for the purpose of a test or to determine whether there is any injustice being caused or whether unfairness for or against the automobile interests can be shown. As an evidence of that I will cite briefly the fact that some time ago Mr. Yellott, a Baltimore lawyer, who is one of the quartet which handles the law business for the American Automobile Association, began an action in behalf of an automobilist of another State to test the power of attorney provision of the New Jersey law, which has been the subject of so much discussion, adverse and otherwise. My department prepared to meet the action and to carry it to an issue, in a thoroughly friendly spirit and with the idea that a legal adjudication of the matter would be a good step forward in the clearing of the atmosphere. I was really pleased that the action had been begun. You can therefore imagine my surprise when it was suddenly dropped and no explanation was offered for the change of front. I wish you would let it be known that no one need have any fear of offending the State authorities or the department of automobiles in particular by bringing any legal action directed against any part of our automobile law. We will welcome it in a friendly spirit and though we will, of course, put up the stiffest legal fight we know how, it will be entirely with the idea that adjudication of any part or all of the law by some competent court will be the means of showing us the right road to travel along the line of legislative regulation of automobile matters."

FLELINGHUYSEN FACES A FIGHT

Jersey Senator's New Automobile Measure to be Vigorously Opposed—Features that Provoke Antagonism.

Doubtless the ears of Senator Joseph Frelinghuysen, New York corporation lawyer and New Jersey legislator, burn, but as the insurance senator is used to this sort of thing he probably doesn't mind in the least the mean things automobilists are saying about him. The Frelinghuysen amendments to the Frelinghuysen automobile law as applied in New Jersey, which were introduced in the legislature of that State last week, have provoked more comment and more criticism and have placed the New Jersey senator more glaringly in the limelight than when his original bill was introduced more than a year ago.

That the proposed amendments to the present New Jersey law will not be passed without a strenuous fight on the part of the allied automobile interests goes without question. The New Jersey State Automobile Dealers' Association, in a meeting in Newark, Thursday afternoon last, fired the opening gun of the campaign to be waged against the proposed amendments by passing a resolution condemning them, and voting to circularize every automobile and accessories concern in the State, in an effort to arouse sentiment against the changes in the law now suggested by Senator Frelinghuysen.

Briefly summarized the proposed amendments consist of a sliding taxation of vehicles based upon horsepower, from $3 to $100 per year; a sliding scale for drivers' licenses, from $1 to $25; the granting of "admission tickets" to out of State motorists to use New Jersey's roads, at a cost of 50 cents per six days, and the abolition of manufacturers' and dealers' blanket licenses, besides a few minor changes.

This last provision is what the dealers in New Jersey object to. The present law compels the dealer to pay a license fee of $20 a year, which permits him to operate five cars. The amendments of Senator Frelinghuysen will, if they become a law, compel the dealer to pay a separate tax on each car. Another apparent injustice is that according to the proposed amendments it would be possible for a dealer from another State to go into New Jersey and demonstrate cars for the small sum of 50 cents, while it would cost the New Jersey dealer a large sum for each car.

A general meeting of dealers from various parts of the State will be held some time during the present week, when it is expected that a plan of action will be decided upon. In the meantime the associated clubs of New Jersey are arranging for a meeting to be held with the same object in view.

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FINED FOR CARRYING TWO NUMBERS

Nice Point in Construction of Massachusetts Law—Local Garage Man Broke It by Trying to Obey It.

One of those complications that result from inability to master the intricacies so frequent in automobile laws furnished a case for Judge Parmenter, of the Boston Municipal Court one day last week. John P. Ware was arrested on a charge of unlawfully operating an automobile on Columbus avenue. The basis of the charge was that the machine carried two numbers. Ware showed to the officer his license to drive the car under one of the displayed numbers, and explained that he was employed at a garage where the car had been repaired, the purpose of his operating it at this time being to test the repairs. Nevertheless, he was haled before the magistrate. In court it was shown that the license exhibited to the officers by Ware was the one supplied to him by his employer, who was present in court to explain the situation. It appears that while the law grants a single license to a garage for all cars belonging thereto, this license does not cover cars sent in for repairs. The complication appeared to arise from the contention on the side of the prosecution that Ware should have had two licenses, corresponding to the two different numbers on the car he was operating. The garage proprietor had not thought this necessary, but he had thought it necessary, under the circumstances, for the car to carry both the owner's and the garage number. The decision of the case turned, however, on the declaration of the policeman that the arrest was made because of inability on the part of the policeman to decide, when a car came along with two different numbers, as to its ownership. Judge Parmenter took this view of the matter and fined Ware $10 for not having a license corresponding to the owner's number.

Bicyclists as "Chaperons" for Motorists.

In common with the British Motor Union the Association Général Automobile, of France, has established a body of cycle mounted scouts to protect the interests of its members by warning them of the danger of arrest for violation of any of the special regulations governing motoring practices. Instead of following the tactics of their over-channel brethren, who employed the scouts to warn motorists of the presence of speed traps, the new corps of the French association are instructed to patrol the streets and warn members of any infringement of the law, such as driving cars with smoking motors, or exceeding the speed limit. Their influence is thus directly in line with the purpose of the law. The force at present employed consists of twelve men, suitably uniformed and mounted on bicycles, who are patrolling the principal streets and boulevards of Paris.

Minneapolis Reduces Renewal Fee.

Automobilists and motorcyclists in Minneapolis will hereafter be required to renew their licenses each year, but they will be charged only 50 cents for each renewal, if the ordinance under consideration by the Minneapolis city council succeeds in passing, and the indications are that it will. When the ordinance first was proposed several weeks ago it required that motor vehicles be licensed annually at the fee of $2 as provided by State law. It was referred to the ordinance committee, a change resulting as stated. Licensees will be given the opportunity of taking the same number each succeeding year upon payment of the fee of 50 cents after the first year. Minneapolis motorists will have to carry two tags, one of the State and the other issued by the city. The latter will be distinguishable as they will contain the name, "Minneapolis" in addition to the number of the license and the year of issuance, a "very little" to place on one tag.

New York's Two Toll Gates Doomed.

Action toward the abolition of the only two toll gates left in New York State was taken by the Board of Supervisors of Erie county last week, when it adopted a resolution asking the county attorney to inform the board what legal steps can be taken to get rid of these two gates. The two gates are in Buffalo. County Engineer Diehl thought it high time that "these two ancient obstructions to traffic are removed," and said: "We cannot improve these roads under the good roads law as long as the toll gates remain upon them. I understand they are the only toll gates left in the State. This form of taxation on traffic is obsolete and should be ended in Erie county."

Piling on the Taxation.

Assemblyman Eagleton, of New York, has again presented in the legislature his two pet bills, which died a peaceful death during the last session. One provides that "no license shall be issued for an automobile in excess of 20 horsepower unless it is to be used for speeding or racing purposes"; the other gives a person who has been injured by an automobile, through the negligence or carelessness of the operator, a lien on the car until the claims for damages have been settled. On the same day Assemblyman A. E. Smith proposed that hereafter the tax on automobiles used for pleasure shall be $2.50 per seating capacity.

If ever the New York to Paris racers reach Siberia, a surprise is in store for all but one of them. The one is question is carrying with it flanges to fit its wheel rims and a permit from the Russian government to run the automobile across the country on the tracks of the Trans-Siberian railway.

FOR A ROAD THROUGH THE ROCKIES

Plan to Petition Congress for a Thousand Mile Highway—Western Business Men in an Organized Movement.

In return for the millions of dollars paid in taxes for river and harbor improvements in America, the business men of four western States will petition the next Congress to appropriate $10,000,000 for a road, 1,000 miles long, to be built from Yellowstone National Park to the Grand Canon of the Colorado river in Arizona.

This gigantic project was launched at a recent meeting of the Denver Real Estate Exchange, but the details were kept secret until last week. Harold Kountze has been named as treasurer, and another prominent western business man, it is stated, will be elected president of the Western Highway Association, by which name the organization which will work for the appropriation is to be known.

Colorado, Utah, Wyoming and Arizona will be asked to assist in the campaign for the road. The originators believe they will receive all the assistance necessary, as assuring letters already have been received from prominent men in these several States.

None of the States through which the proposed highway is to pass has sufficient finances to build it, but as it will be a great highway for travelers generally, it is argued that the road will prove of more importance than some of the inland harbors upon which vast sums are expended and from which the majority of westerners receive no apparent benefits.

While the plans of the organizers have not definitely been decided upon, it is the general opinion that Congress will be asked to donate the cost of building and maintaining and to establish a toll system which will repay the government for its expenditure. The proposed road will traverse some of the most famous scenic and historic spots of the Rocky Mountain region, including cliff dwellers' villages and at least one Indian reservation. As such a highway would attract countless tourists and result in consequent expenditure of money in the States named, it would therefore be of inestimable value to these States, not counting all the other advantages from well kept highways.

Placing Signs in the Ohio Valley.

A vote to purchase road signs, which the county commissioners have agreed to place, was the most important work of the Ohio Valley Automobile Association at its annual meeting in Wheeling, W. Va., last week. The report of the treasurer showed a balance of $275, which will be expended in signboards and work of a similar character.

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The Week's Patents.

873,325. Spring for Vehicles. Patrick J. McGinn, Salisbury, Rhodesia. Filed Aug. 7, 1906. Serial No. 329,549.

A vehicle provided with heavy leaf main springs by which the body or bed is supported when weighted, and light supplemental springs connected with the front ends of the main springs and with the body or bed work by means of plates having downwardly curved portions over which the supplemental springs are passed, said plates being also provided rearwardly of said downwardly directed curved portions with keepers through which the supplemental springs are passed, and the rear ends of the main springs being also provided with supplemental springs connected therewith and with the body or bed work of the vehicle.

873,329. Vehicle Spring. Gustav Schmitt, Milwaukee, Wis. Filed March 18, 1907. Serial No. 363,091.

1. A vehicle spring comprising oppositely bowed springs connected together in the center, links connected to the ends of one of said springs, and rollers connected to the ends of the other spring and mounted to move in said links.

873,372. Intake Device for Explosive Mixtures in Vapor Engines. Clarence P. Hollister, Pittsfield, Mass., assignor to Stilson Motor Car Co., Pittsfield, Mass., a Corporation of Massachusetts. Filed Oce. 4, 1907. Serial No. 395,844.

1. A vapor mixture intake device for a six cylinder engine comprising three intake groups of two each, a single intake to each group, a continuous chamber into which the several single intakes open, a general chamber connecting at its respective ends with the said continuous chamber and a single pipe connecting centrally with the general chamber.

873,384. Radiator. Elmer L. Ogle, New York, N. Y., assignor to N. Leroy Otis, New York, N. Y. Filed Oct. 8, 1906. Serial No. 337,887.

1. A cooler comprising polygonal tubes having a longitudinal seam on one flat side provided with a rectangular enlargement at one end only and grouped alternately so as to leave spaces between such tubes, substantially as described.

873,385. Radiator. Elmer L. Ogle, New York, N. Y., assignor to N. Leroy Otis, New York, N. Y. Filed Jan. 7, 1907. Serial No. 351,095.

1. Steel radiator tubes adapted to be united by solder; tinned at the points where they are to be soldered, in combination with a superimposed coat of copper overlaying the tube including the tinned surfaces.

873,392. Carburetter. Albert E. Stokes, Dallas, Texas. Filed Feb. 7, 1907. Serial No. 356,204.

A carburetter consisting of a mixing chamber, an oil inlet pipe opening into said chamber, a hollow spreader within the chamber having a concave face upon which the oil drops, a tubular stem supporting said spreader and communicating with a source of heat, a valve in the oil inlet pipe, a passage connecting the mixing chamber and engine, a valve adapted to close said passages, and means connecting the valves so they will be simultaneously operated, said means being adjustably connected to the valve in the oil inlet, for the purpose described.

873,399. Combined Heating and Ventilating System for Automobiles. Nathan W. Williams, Evanston, Ill. Filed Nov. 2, 1906. Serial No. 341,737.

1. In combination with the structure to be heated, a hydro-carbon engine, an exhaust pipe leading therefrom, a muffler secured to the discharge end of the exhaust pipe and in open communication with the atmosphere, an inclosing box, secured to the structure to be heated and provided with an intake opening for supplying fresh air, a register in communication with the inclosing box for controlling the flow of heated air therefrom, a radiator box within the inclosing box, a branch pipe leading from the radiator box to the exhaust pipe intermediate the muffler and the engine, and a discharge pipe, leading from the radiator box and out of the inclosing box and discharging directly into the atmosphere, substantially as described.

873,405. Automobile. Franz Bartl, New York, N. Y. Filed Nov. 30, 1906. Serial No. 345,589.

1. A motor vehicle or automobile in which the actuating mechanism is located within the chassis frame comprising a drop axle with a stump on each end passing through the hub of a wheel, borings in said stumps, a wheel shaft in each boring, a ball bearing on each side of the wheel on the axle stump, a fourth ball bearing at the inner end of each shaft, and a standard bolted to the drop axle supporting the last named ball bearing and the inner end of the shaft.

873,434. Motor Car. James T. Hepburn, Lochwinnoch, Scotland. Filed Nov. 20, 1906. Serial No. 344,299.

1. In a motor car the combination with the front axle of a motor pivotally supported thereon, gear for driving the back axle, a shaft directly connecting said gear with the gear of the motor, a tube surrounding said shaft, a second tube arranged outside of the first one, the one tube being fixed at its front end and free at its rear end, while the other is fixed at its rear end and free at its front end in order that the wheel axles may take up different angles relatively with one another and to the horizontal.

873,453. Folding Seat Frame for Automobiles. James M. Nolan, New Haven, Conn., assignor of two-thirds to William H. Wilson and Charles Rasmussen, New Haven, Conn. Filed Aug. 23, 1907. Serial No. 389,848.

1. A folding seat frame for automobiles consisting of a bracket having outwardly extending slotted guides and transverse and longitudinal grooves, a seat spider having inwardly extending arms and fingers, a rod connecting said fingers and extending through the slots in the frame, one of said fingers adapted to ride in said grooves, substantially as described.

873,461. Change Speed Gear. Maurice Sizaire and Louis Naudin, Puteaux, France, assignors to Société des Automobiles Sizaire et Naudin, Paris, France. Filed Feb. 28, 1906. Serial No. 303,443.

1. A change speed gear for motor cars, motorcycles, and like comprising a driven axle, a toothed wheel secured upon said axle, a driving shaft having a universal joint, a number of change speed pinions capable of sliding on the said driving shaft and driving the said toothed wheel, means for moving laterally said universally jointed shaft to disengage said pinions from said wheel and for sliding longitudinally the number of pinions when these pinions have been disengaged from with the toothed wheel.

873,478. Lubricating Device for Automobiles. Frederick J. Ziegler, New York, N. Y. Filed April 2, 1907. Serial No. 365,965.

1. In a lubricator, the combination of a container for the lubricant, a shaft which controls by its angular position the discharge of lubricant from said container, a shaft journaled in said container and arranged for operative connection with the engine to be lubricated, and an operative connection between said shafts by which the discharge controlling shaft is rocked.

873,544. Automobile Bumper. Ray W. Harroun, Chicago, Ill. Filed March 29, 1906. Serial No. 308,683.

1. In an automobile bumper, a rail extending across the front of an automobile attached to the frame by horizontal arms running through the eye bolts at the frame ends and supported by brackets at the rear ends backed up by springs surrounding said horizontal arms.

873,620. Motor Vehicle. William C. Schwarz, Edwardsville, Ill. Filed May 29, 1906. Serial No. 319,358.

1. In a motor vehicle, a frame, front and rear axles pivotally mounted at their centers beneath the frame, traction wheels fixed on the ends of said axles, differential gearing arranged on the axles, pinions meshing with and driving said differential gearings, flexible extensible shafts arranged to drive the pinions, means carried by the frame for driving the flexible extensible shafts, a pair of cross rods pivotally connected at their ends to the ends of the axles, a rod pivotally connected to one of the cross rods, and means arranged on the frame for imparting longitudinal movement to the rod.

873,679. Band Brake. Frank O'Brien, Jackson, Mich., assignor to Buick Motor Company, Flint, Mich. Filed Dec. 18, 1906. Serial No. 348,431.

1. In a brake of the kind described, the combination of a wheel carrying a ring, an axle connected to the wheel, a tubular casing over the axle, having a circular head at the end fitting at its edge close to the ring, with a series of pins and a stop projecting into the ring, a split band supported upon the pins, with its ends arranged to abut the stop, and means to expand the band.

873,738. Vehicle Tire. John Eckhard, Buffalo, N. Y. Filed April 7, 1906. Serial No. 310,554.

1. A tire for wheels comprising a retaining member held to the felly of the wheel, a multi-part tire within said retaining member and each of the parts thereof having curved undercut grooves in the ends thereof, combined connecting and fastening devices between the several parts of the tire comprising each a crescent-shaped transversely disposed connector fitting the grooves in adjacent ends of two adjoining blocks and fastening bolts on said connector passing through said retaining member and the felly of a wheel.

873,764. Motor Starter. Adolph W. Manz, Chicago, Ill., assignor to Paul H. Manz, Chicago, Ill. Filed Dec. 24, 1906, Serial No. 349,356. Renewed Nov. 4, 1907. Serial No. 400,548.

1. A motor starter, including a lever, a ratchet wheel removably mounted upon the motor shaft, a pawl attached to said lever, a plurality of rock-bars mounted on said lever and having flexible connection with each other and with said pawl, means for operating the lever, a dog adapted to engage the said ratchet wheel during the reverse move-

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ment of the lever and means for holding the said dog out of engagement with the ratchet wheel when the said lever is in its initial position.

873,841. Vehicle Wheel. Charles E. Cole, Cleveland, Ohio. Filed Dec. 26, 1906. Serial No. 349,423.

1. In a vehicle wheel, the combination with a pair of annular outer plates, of a shaft to which said plates are secured, a ring also secured to said shaft, said ring having a concaved outer periphery, a second ring surrounding the first named ring, said second ring having a concaved inner periphery, hollow rubber cushioning balls located between said rings, and plates secured to the outer ring which overlap the inner ring and which are entirely covered by the outer plates, openings formed in the plates that are carried by the outer ring, and projections carried by the outer plates which extend into said openings, said openings being larger than said propections.

873,903. Transmission and Speed Changing Mechanism. Eugene Schmidt, Stillwater, Minn. Filed Oct. 28, 1905. Serial No. 284,816.

1. Apparatus of the class set forth, comprising a suitable frame, engines mounted upon said frame, a drive shaft and transmitting mechanism, comprising fly wheels carried by said engines and having frictional drive faces, a frictional drive wheel in continuous peripheral contact with each of said faces, a sleeve feathered and free to slide on said shaft upon which sleeve said frictional drive wheel is journaled, a clutch between said sleeve and frictional drive wheel, means for sliding said sleeve to move said drive wheel across the faces of said fly wheels, and means for throwing said clutch into and out of operation.

873,910. Friction Clutch. Edmund Sprung, Detroit, Mich. Filed April 20, 1907. Serial No. 369,299.

1. In a clutch, the combination of a friction disc or member having a smooth contact surface, a second friction member formed from a disc consisting of segments yieldingly held with their friction surface in different planes but registering with each other, and means for moving said second friction members into the same plane and into frictional contact with the other member.

873,911. Vehicle Wheel. Harold M. Starley, Coventry, England. Filed Sept. 18, 1906. Serial No. 335,124.

1. In road vehicle wheels, the combination consisting of a hub ring having circumferential seating apertures therein, screwed locking bolts seated within the said hub ring apertures, inwardly projecting driving studs secured to the wheel rim, and tubular metal spokes in engagement at their respective extremities with the said locking bolts and driving studs, as set forth.

873,926. Longitudinally Displaceable Car Body for Motor Vehicles. Rudolf Diesel, Munich, Germany. Filed Jan. 25, 1907. Serial No. 353,957.

In a motor car, a longitudinally displaceable car body, having rolls approximately in the vertical transverse plane passing through its center of gravity, said rolls being swingingly or otherwise movably mounted on the car body for enabling a lifting of the car body from the frame, and catch pieces mounted on the rear end of the under framing and arresting the rolls when the car body, after having been displaced, is tilted towards the rear side.

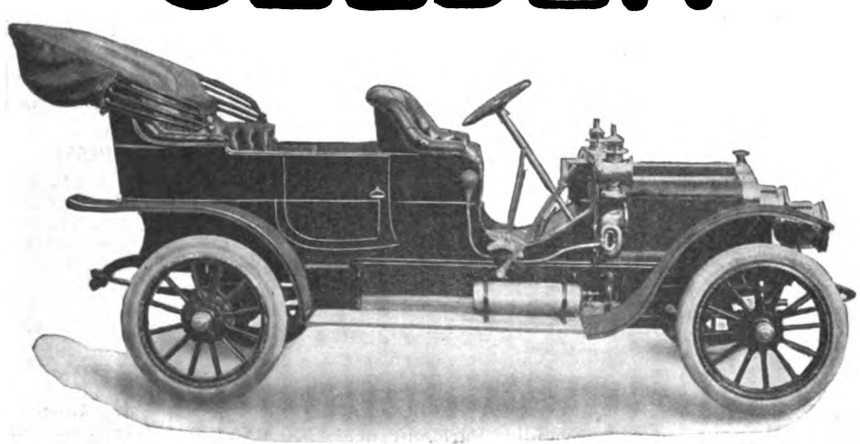
873,957. Vehicle Tire. George A. Parse, Jr., New York, N. Y. Filed March 9, 1907. Serial No. 361,474.

1. In a vehicle tire, the combination of a circular rim consisting of U shaped sections having an elastic outside covering of a ring adapted to be mounted on the felly, means for securing the ring to the felly, and elastic blocks interposed between the ring and the U shaped sections comprising the ring, substantially as described.

873,968. Electric Spark Plug. Frederick B. Thatcher, Providence, R. I. Filed Jan. 31, 1907. Serial No. 355,035.

1. In a spark plug, an outer shell having one end formed with screw threads on its interior and its opposite end formed with screw threads on its exterior, a shoulder formed on the interior of said shell intermediate its length, an outer core member extending in one end of said shell, and having an inner annular lip, a packing sleeve around said outer member engaging said interior threads and abutting said lip, an inner core member extending within the other end of said shell and having a lip engaging said interior shoulder of the shell, the outer portion of said last named end of shell being enlarged on its interior, a sparking point rod extending through said core members, a sparking point on said rod projecting into said enlarged interior of the shell, a collar on said rod to the rear of said point abutting said inner core member, said end of the shell surrounding the inner core member being formed with two oppositely disposed openings which expose said

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SPECIFICATIONS

Engine—4 cylinders, 4¼x4½, 28-30 brake horsepower.
Transmission—3 speeds forward and reverse, selective, Timken bearings.
Wheel base—109 inches; tread, standard; clutch, cone leather.
Body—sheet metal, straight line type, roomy and comfortable.
Tires—32x3½, quick detachable; make optional.
Frame—pressed steel, 4¾ inches deep.
Front axle—single I-beam drop forging, ball bearings.
Rear axle—bevel gear drive, enclosed type, roller bearings.
Ignition—synchronized jump spark.
Weight—empty, 2,200 lbs. (actual, not catalogue).

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sparking point, and a wire terminal secured to said last named end of the shell at right angles to said openings thereof.

873,978. Clutching Device Adapted for Use in Communicating Rotary Motion and in Controlling the Transmission Thereof. Frank Bailey and Frederick H. Jackson, London, England. Filed Dec. 27, 1906. Serial No. 349,686.

1. In hydraulic clutch mechanism of the character herein referred to, the combination, with an eccentrically formed casing or chamber and a disc formed with radial slots in which slab-like pistons slide, of a packing plate interposed between said disc and one wall of said chamber, and passages formed in said wall and leading from said plate to a controlling valve, whereby the liquid under pressure is admitted to the back of the plate, substantially as and for the purpose set forth.

874,075. Variable Speed Transmission and Reversing Gear. William S. Hovey, Three Rivers, Mich., assignor to Sheffield Car Company, Three Rivers, Mich. Original application filed Oct. 18, 1906. Serial No. 339,534. Divided and this application filed Jan. 16, 1907. Serial No. 352,645.

1. The combination with an engine crank shaft, of a transmission gear, comprising a driving transmission shaft connected to said engine crank shaft by a universal joint; gears arranged on said driving transmission shaft, said gears being fixed thereto, and said gear being revolubly mounted thereon; a clutch for securing said gear to said shaft; a transmission shaft; gears arranged on said transmission shaft to mesh with said wears respectively, said gears being revolubly mounted on said shaft and said gear being fixed thereon; a clutch mechanism for securing said gears to said shaft; a beveled gear on said shaft; a driven shaft; a pair of beveled gears revolubly mounted on said driven shaft arranged to mesh with said beveled gear on said shaft; and a clutch mechanism by which either of said gears on said driven shaft may be connected thereto, substantially as described.

874,114. Lubricator. Johannes T. Pedersen, Woodside, N. Y., assignor to Pedersen Manufacturing Company, New York, N. Y. Filed Feb. 21, 1907. Serial No. 358,545.

1. In a lubricating device and in combination, a series of oscillating cylinders, a series of reciprocating and oscillating pistons within said cylinders, means for simultaneously moving the said cylinders, and pistons, a power device for actuating the same, a body frame serving as a support for the said cylinders and means for conveying the oil to and from the respective ends of the cylinders and pistons with the movement of the pistons.

874,119. Roller Bearing. James E. Sackett, Sparrow Bush, N. Y. Filed June 8, 1907. Serial No. 377,971.

1. In a roller bearing, the combination of a shaft or axle, a casing having a circular series of spoke sockets and abutments at the inner ends thereof and also having smooth bores at its ends and annular abutments at the inner ends of said smooth bores, bearing rings arranged side by side within the circular series of spoke sockets an annular toothed recess, means connected an annular toother recess, means connected with the walls of the spoke sockets for detachably retaining said bearing rings in position, bearing rings arranged side by side in the end smooth bore of the casing and forming annular smooth grooves and annular toothed recesses, bolts detachably connecting one set of the latter bearing rings with the adjacent abutment of the casing, bolts detachably connecting the other set of the latter bearing rings to the adjacent abutment of the casing, sleeves detachably secured on the axle, within the casing, and forming circumferential grooves and circumferential toothed recesses, and three sets of anti-friction rollers interposed between the bearing rings and the sleeves and having smooth portions disposed in the opposed smooth grooves of the rings and sleeves and toothed portions arranged between and engaging the teeth of the rings and sleeves.

874,289. Circuit Closer for Explosive Engines. Thomas A. Bemus, Boston, Mass., assignor to T. Alton Bemus Company, Incorporated, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 2, 1905. Serial No. 281,054.

1. The herein described circuit closer comprising a sleeve, a plug of insulating material carried by said sleeve, a casing mounted on and movable relative to said sleeve, a primary brush, a carrier therefor also mounted on said sleeve, a secondary brush carried by said plug, a secondary contact in engagement with said secondary brush, primary contacts mounted in said casing and with which said primary brush is designed to engage, secondary terminals also mounted in said casing in proximity to the plane of movement of said secondary brush, and a secondary binding post in engagement with said secondary contact.

874,388. Clutch. Thomas J. Butler, Harrison, N. J. Filed Jan. 24, 1907. Serial No. 353,913.

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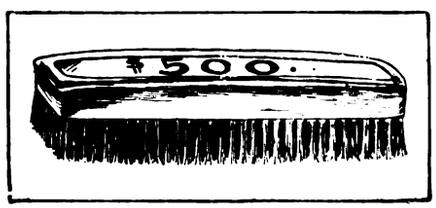
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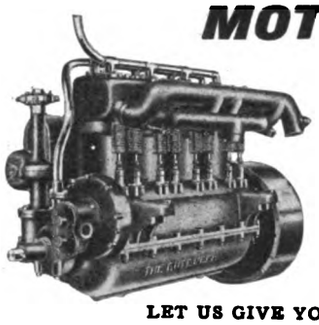
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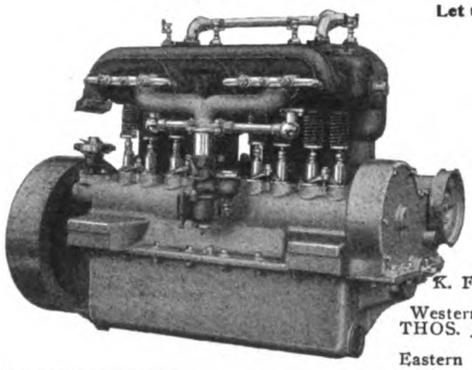
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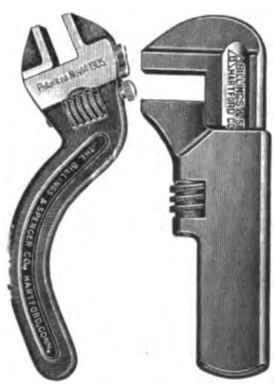
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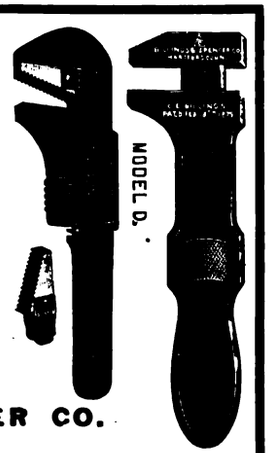
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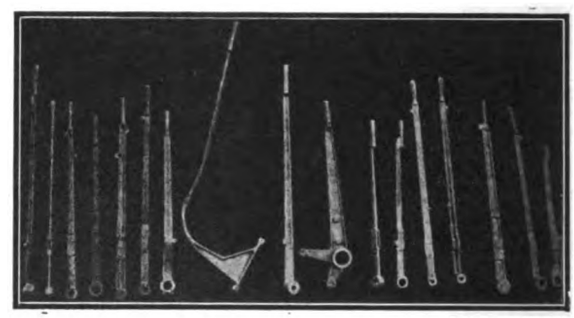
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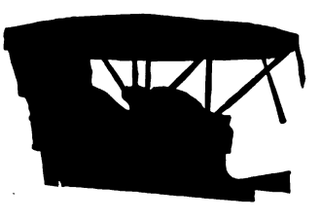
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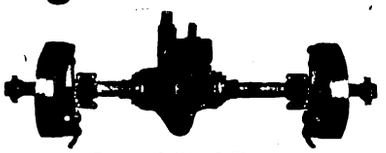
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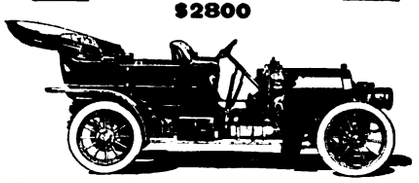
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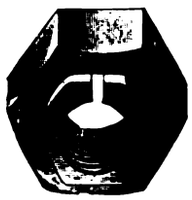
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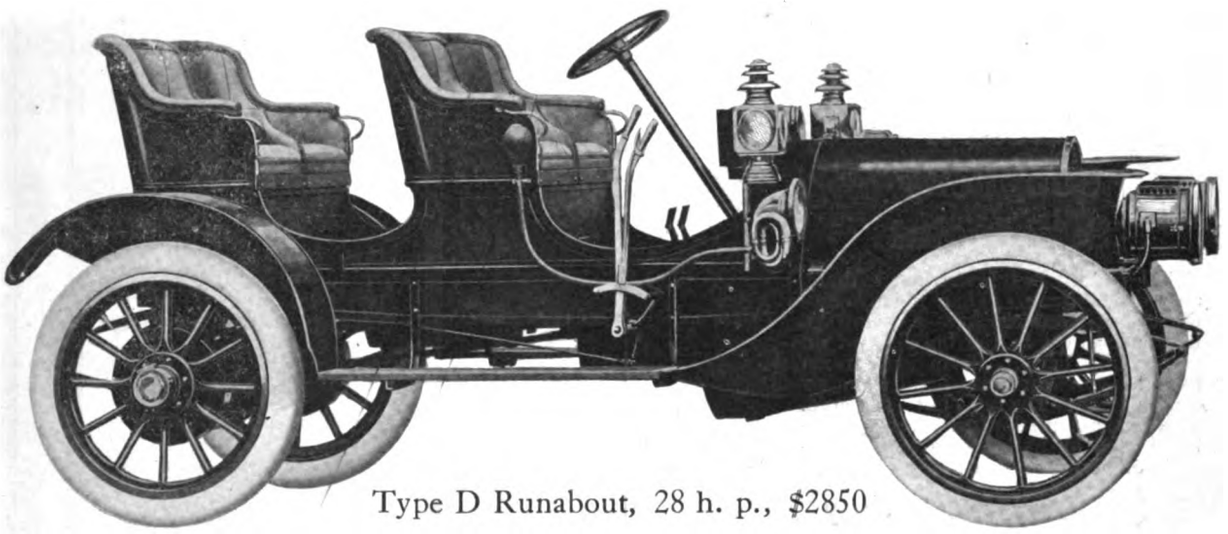
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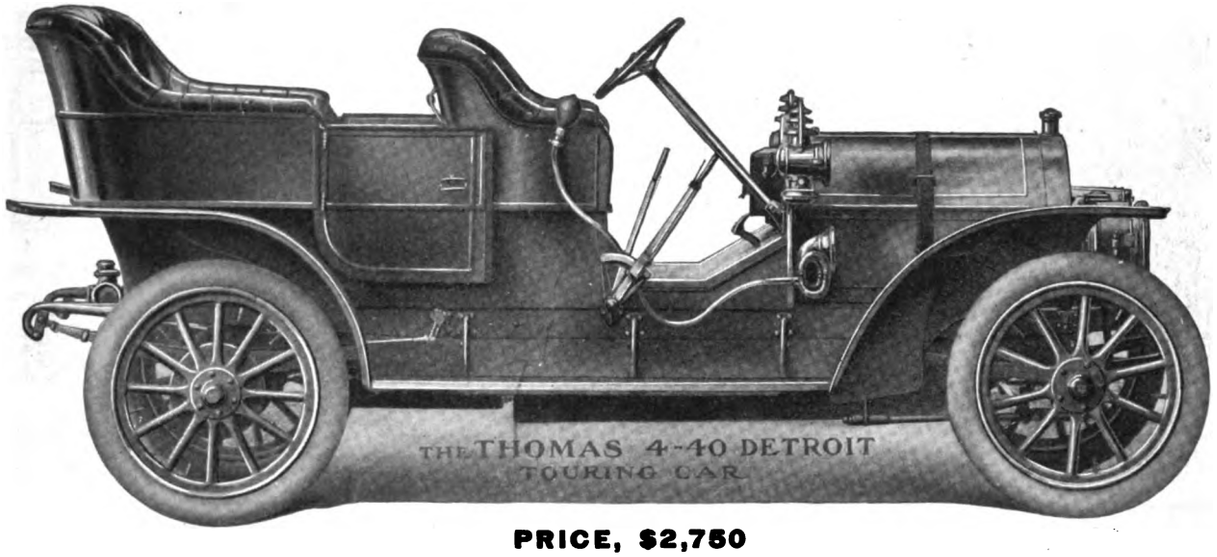
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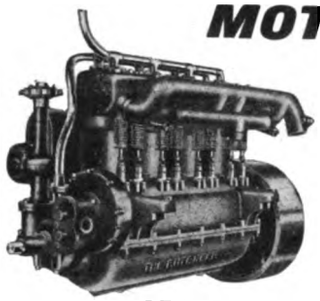
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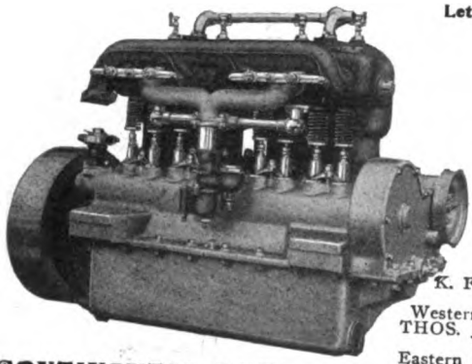
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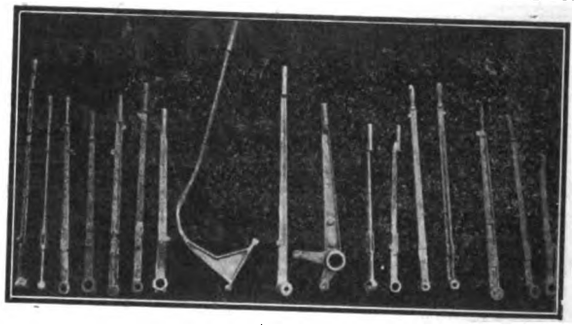
DON'T GET BUMPED

The First in the Market
The Best in the Field
Others are Imitators

THE HARROUN BUMPER PATENT has been allowed, and as soon as it can be issued we will bring suit against all USERS of Bumpers infringing on and not manufactured under the HARROUN license.
R. W. HARROUN, Patentee.

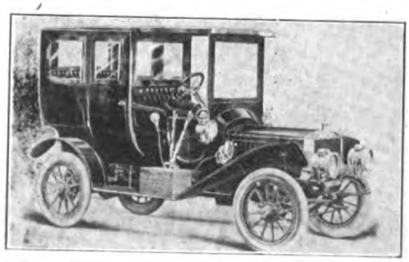
THE TURNER BRASS WORKS,
SOLE LICENSEES, U. S. A. SYCAMORE, ILL.

PARSONS' MANGANESE BRONZE LEVER CASTINGS



Sole Makers
THE WILLIAM CRAMP & SONS SHIP & ENGINE BUILDING COMPANY, - Philadelphia, Penna.

AUTOMOBILE BODIES



TWO FACTORIES

Large Contracts for entire outputs. Specially equipped for Limousine and all other high-class enclosed work.

Output for this season, 9,000 jobs, complete, trimmed and finished

RACINE NOVELTY MFG. COMPANY, Racine, Wis.

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Garford

The making of gasolene automobiles is no longer a matter of experiment. Further immediate radical change in motor car design is most unlikely.

This point was reached three years ago. Since that time the Garford chassis has been the same as to "TYPE."

The new cars that are most likely to be out of date in three years are those containing the greatest number of variations from the established "TYPE" of to-day.

The Garford, orthodox in design, and extravagant only in workmanship and refinements, is the car to satisfy the man who buys his automobile as a permanent investment for years to come.

Address
Eastern Inquiries
Garford Motor Car Co. of New York.
1540 Broadway, New York City.

Western Inquiries
Garford Motor Car Co. of Cleveland,
1372 East 12th St., Cleveland, O.



AJAX
WRAPPED TREAD
TIRES

What stronger proof could there be of Ajax Material and Workmanship?
Write for copy of guarantee stating what size tire you are using.
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AGENTS IN ALL LARGE CITIES

Nothing can win approval without merit



Splitdorf Ignition

Has Attained National Repute
Because of Unquestioned Merit

The confidence in SPLITDORF Ignition that has made this business the greatest of its kind is rooted in Splitdorf quality.

C. F. SPLITDORF
Walton Ave. & 138th St. NEW YORK

Triumph Grease, What Is It?

¶It is the newest production of auto grease, and benefitting by the experience of other makers, we have produced the best one yet. ¶We do not imitate any one, nor follow any other maker's plans. Our grease is spongy when made—it is spongy all the time, but it does not melt or run out. ¶It never gets hard or stiff so that it will not do its work properly—no matter how cold the weather is. It is made of the purest and best lubricants to be found, and compounded in such a manner as to produce what the auto user has long wanted. ¶A grease that will lubricate from start to finish, and will last long enough to pay for the trouble of putting it in the machine, and then staying right there like a good clerk attending to its own business constantly, and does not need punching up and renewing every few days, and leaves the machine clean and not all grease when through using it. ¶It is the red thorn in the side of the old fogy grease, or the non-fluid oil makers. It is always RED. No other grease like it, and it is not like any other grease. So we are not imitators in any sense of the word. ¶Buy it, and try it, and if not all we claim for it, any dealer will refund all expense it has been to you.

The Perfection Grease Company, South Bend, Ind.

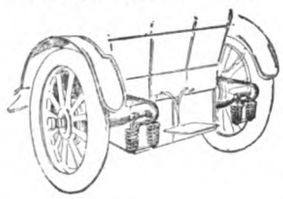


A NEW SENSATION

Equip your car with

Supplementary Spiral Springs

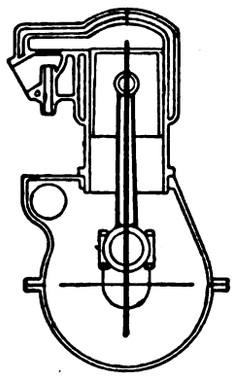
and notice the difference. No jolts, no jars, no broken springs, or dislocated joints. The "Thank-ye-marms" will still be with you, but you won't know it. Our new booklet is very interesting, and is yours for the asking.



Supplementary Spiral Spring Co.
4555 Delmar Ave., St. Louis
New York Branch, 52 West 67th Street

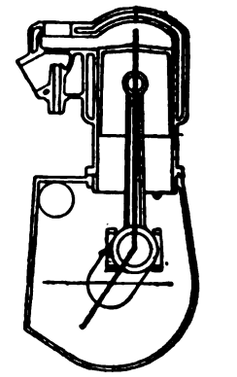
"RAJAH"
SPARK PLUGS
IGNITION ABSOLUTELY SURE
RAJAH AUTO SUPPLY COMPANY
140 WASHINGTON STREET, NEW YORK, U. S. A.

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Crank Shaft on Center

Rambler



Crank Shaft Offset

Why the Offset Crank Shaft

One of the greatest improvemen·s in motor construction is the offset crank shaft. Its advantages are positive and direct.

First—By practically eliminating the dead center the efficiency of the motor is greatly increased through the greater leverage and more direct thrust from piston to crank shaft.

Second—Increased life of the motor through reduction of side thrust on cylinder walls and consequent saving in wear.

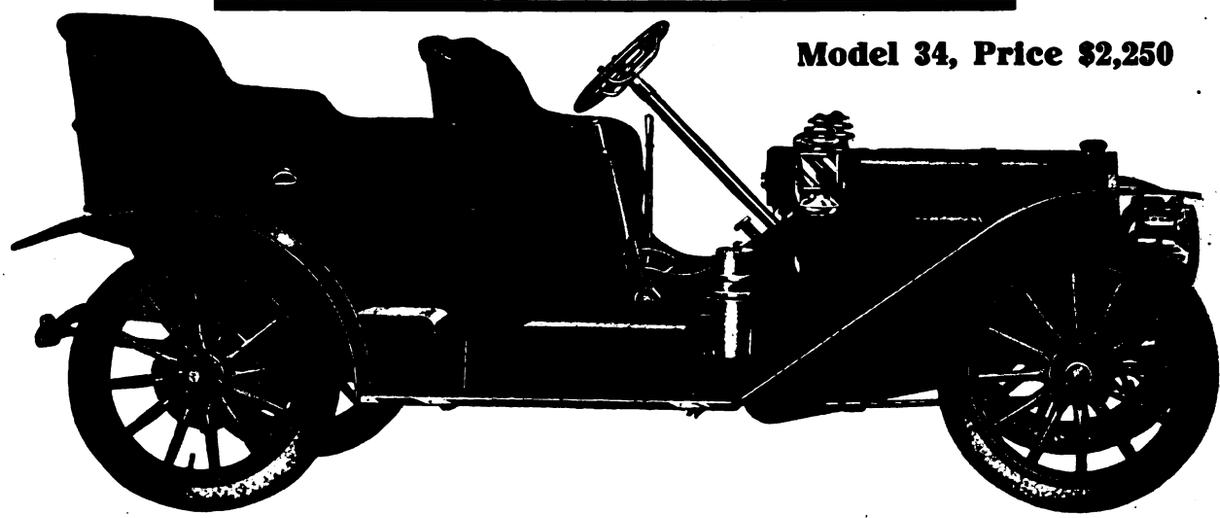
Third—Reduction in vibration and increased steadiness of running through more direct application of power generated in the cylinders.

Like many other fundamentally good features this must be done right and in the Rambler it is right both theoretically and practically and the result is a motor that combines the highest degree of efficieny with long life and economy of operation.

It is this and other features of equal value that make

The Car of Steady Service

Model 34, Price $2,250



This four cylinder chassis, equipped both as a 5-passenger touring car and 3-passenger roadster. Price of each style $2,250. The Rambler Utility Car with double opposed motor, $1,400.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wisconsin

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, February 27, 1908. No. 22

RECEIVER FOR THE RELIANCE

Detroit Truck Manufacturers Forced to the Wall—Expect to Pay All Claims and Reorganize.

On petition of the Union Trust Co., trustee, Victor N. Gurney was, on Monday last, 24th inst., appointed receiver for the Reliance Motor Car Co., Detroit, whose plant is closed. Gurney gave bond for $25,000. This, it is announced, is one step toward the reorganization of the company with a larger capitalization. All creditors and stockholders, it is declared, will be taken care of.

The Reliance Motor Car Co. was incorporated in 1904 with $400,000 capital, and of late has been engaged almost wholly in the production of commercial vehicles. The company had authority to issue $150,000 bonds, of which $130,000 were sold and $20,000 remained in the treasury. The Union Trust Co. was trustee under a mortgage to secure the bonds.

There are several large claims against the company and one foreign company has begun an action to collect. The directors declared in court that a sale of the property by the receiver at this time would result in creditors losing half their claims, while with the reorganization they could be taken care of and the concern put upon its feet.

A circular issued to the creditors by the board of directors after the appointment of the receiver, says:

"A sale to such a new organization will enable the creditors to derive benefits from the business of the new company, and will continue the manufacture of Reliance trucks. The outstanding bonds, under the mortgage, amount to $130,000, there being $20,000 of bonds remaining in the treasury. The holders of the bonds outstanding, desiring, if possible, to preserve the good will of the enterprise, and believing that more will be realized by such a plan than through a forced sale by receiver, have been prevailed upon to permit their former offer to stand, providing for the issuance of the remaining $20,000 of bonds to be placed in the hands of Frank G. Smith, cashier of the First National Bank, of Detroit, Mich., as trustee, as security to the creditors, provided that within ten days they all agree to accept said security, and authorize Frank G. Smith, as trustee, to join with the present bondholders in disposing of the property to the best possible advantage.

"This will give the creditors a proportionate share of the proceeds of the property with present bondholders. If stock is received, it is confidently believed it can be readily converted into cash."

Dayton's Quick Recovery from Big Fire.

Fire which broke out in the trimming room of the Dayton Motor Car Co.'s plant at Dayton, Ohio, at 1 o'clock Friday morning, 21st inst., caused a loss of approximately $150,000, which is fully covered by insurance.

What caused the fire is a mystery. Fed by the light nature of the stuff in the trimming department, the flames spread rapidly to the stock room wherein were stored bodies, trimmings, supplies, etc., and while the firemen did good work and confined the flames to the older of the two buildings which comprise the Dayton plant, the new concrete building was considerably damaged by water. Before the last engine had left the wreckage, however, the Stoddard-Dayton staff had moved its offices to the new concrete structure and was doing business the following day, when several shipments were made. While the loss is severe, it will not materially affect the operations of the company or delay deliveries more than two weeks, the company having risen to the occasion with characteristic enterprise.

Insurance Rates Raised in St. Louis.

Because of several recent fires, in one of which a loss of $200,000 was involved, the St. Louis survey bureau has increased its rates on automobile garages, repair shops and factories. The increase ranges from 25 to 75 per cent.

SELDEN SUITS GIVEN NEW TURN

Judge Holt Rules that Judgments by Agreement do not Establish Validity—His Far Reaching Opinions.

Litigation involving the Selden patent was given a new turn on Saturday last when Judge Holt, sitting in the United States Circuit Court for the Southern District of New York, handed down his decision in the suit of the Electric Vehicle Co. vs. the De Dietrich Import Co. and Walter G. Allen, who formerly was the active man in that concern, and who later became interested in the importation of Mercedes cars and still later in the manufacture of the Allen-Kingston car.

The De Dietrich company, through Allen, secured a Selden license and when he began handling the Mercedes, he was promptly sued for infringement by the Selden interests, which suit he permitted to go by default. When he took up the Allen-Kingston car, the Electric Vehicle Co., as owners of the Selden patent, sought to have him punished for contempt in violating the terms of the decree and injunction entered at the time of the default. When contempt proceedings were instituted, Allen moved to have the default reopened.

This motion Judge Holt denies, at the same time defining the obligations entailed by the execution of such contracts recognizing patents and also pointing out very clearly why a judgment obtained by default is as binding as one secured in a contested case. The court holds, however, that as the Selden patent never has been declared a pioneer patent in a contested suit, and as no evidence was submitted to prove that the Allen-Kingston car is an infringement of the patent, he hesitates to punish Allen for contempt and accordingly denies that motion.

Judge Holt's interpretation of Judge Coxe's opinion, which has served as one of the main props of the Selden litigation, is

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far reaching. In effect it says that a suit in which judgment is obtained by default or agreement does not establish the validity of a patent, but applies only to the particular parties to such proceedings. Judge Holt's opinion in full is as follows:

I think that the motion to open the default should be denied for the following reasons:

1. The term at which the decree was entered had expired before the motion was made. 2. The defendants were guilty of laches in making the motion. 3. No valid excuse is shown for the default. 4. The evidence satisfies me that the defendants, after full consideration, concluded to make no defense, and had no intention to move to open the default until after the motion to punish for contempt was noticed.

On the question whether the defendants have been guilty of contempt I have felt some hesitation. On the one hand, a final decree and an injunction issued pursuant to it should, in a patent case, as in all other cases, be effectively enforced. A decree pro confesso should be enforced just as effectively as any other decree. The fact that the defendant Allen, at first individually, and afterwards through the company which he had organized, took out licenses from the complainants authorizing him to import and sell in this country the De Dietrich machine affords a strong legal presumption that he admitted that the Selden patent was valid and that it covered the De Dietrich machine. The fact that, in consideration of obtaining such licenses, he executed contracts agreeing not to sell any gasolene automobiles not licensed by the complainants affords a strong presumption that he admitted that the Selden patent was a pioneer patent, covering all gasolene automobiles of the usual type. The fact that he permitted a decree to be taken against him by default, holding that he had infringed the patent by importing and selling the Mercedes machine, establishes as to him that the Mercedes machine is an infringement of the Selden patent, and, therefore, as to the defendant Allen, it may be a proper test, in order to determine whether the Allen-Kingston automobile infringes the patent, to compare it, not only with the patent, but with the De Dietrich and Mercedes machines. On the other hand, the fact that Allen suffered the decree to be taken by default strictly establishes only the truth of the facts alleged in the bill. He admits that he had imported a few Mercedes machines, and the fact that he permitted the decree to be taken in that case simply establishes that he had no defense to make to that charge. The decree did not establish that the Allen-Kingston automobile infringed the Selden patent. It did decide that Allen had infringed the patent by importing and selling the Mercedes machines, and the decree thereupon enjoined him from doing anything to infringe the patent.

If, therefore, the Allen-Kingston automobile is obviously, upon mere inspection, an infringement of the Selden patent, the motion to punish him for contempt in offering to sell it should be granted. The question whether it is obviously an infringement seems to me to depend upon the question whether the Selden patent is a pioneer patent or not.

If the Selden patent conveyed to the patentee a monopoly, in this country, of the right to make and sell any gasolene automobile of the usual types, then I think that the points of distinction alleged in the affidavit of Mr. Smith are immaterial, but if the Selden patent is not a pioneer patent covering the entire fundamental principle of the gasolene automobile, but simply is a patent for a particular kind of a gasolene automobile, I think it at least doubtful, in view of the grounds of distinction pointed out by Mr. Smith, whether the Allen-Kingston automobile infringes.

It is claimed that the opinion of Judge Coxe shows that he held the Selden patent to be a pioneer patent, and its language, at first reading, seems to tend to sustain that claim; but I think that the opinion of Judge Coxe should be read in the light of the real question before him, and I cannot see how the question of the absolute validity or invalidity of a patent can be determined upon a demurrer which is based simply upon the claim that the patent is void on its face. If the patent shows on its face that it is void, that fact may be determined upon a demurrer; but it seems to me that a decision upon such a demurrer upholding a patent cannot be conclusive on any defense which depends on extraneous proof as for instance, anticipation by earlier patents, or by inventions described in earlier publications, or by prior use, or any of the many defenses which may be set up to the validity of a patent which are not apparent on its face. I therefore cannot see how the decision of Judge Coxe upon the demurrer establishes conclusively that this patent is either a pioneer patent, or is valid, and admittedly there has been no decision rendered after a hearing upon the merits on proofs taken. Moreover, there are facts in this case which support the suggestion that the complainants have hesitated to bring such a question to actual decision.

The patent was applied for in 1879. It was granted sixteen years later, in 1895. Nearly thirteen years have since passed, during which the complainants have asserted that they had a pioneer patent, and have caused many persons to take out licenses from them, and have collected, according to the motion papers, about $1,500,000 for license fees, without bringing to actual trial a case testing the question of the validity of this patent on the merits. Several such cases have been brought. One was a case against the Winton Carriage Company, in which the complainants took their prima facie proofs, and the defendant had nearly completed its proofs, when the case was compromised, and settled out of court. As early as 1903 suits were brought by the complainants against the Ford Motor Company and the O. J. Gude Company, for the infringement of the Selden patent, and as early as 1906 suits were brought by the complainants against the Panhard Company. In all these suits defenses were interposed on the merits, but the testimony never has been completed, and the cases never brought to a hearing.

The claim put forth upon this motion is that the Selden patent is a pioneer patent, and that all makers of gasolene automobiles of the usual types infringe the patent. So serious a claim as this ought not to be upheld by the courts unless the complainants either have established the validity of the patents in a contest litigation, or have been ready to do so without delay whenever an opportunity has been offered.

If this motion is granted, it will be urged, as the decision of Judge Coxe on the demurrer has been urged, as an adjudication that the Selden patent is a pioneer patent, and that all makers of gasolene automobiles must have a license. I think, on the papers submitted, that there is sufficient doubt whether the Selden patent is a pioneer patent, and that, if it is not a pioneer patent, there is sufficient doubt whether the Allen-Kingston automobile infringes, to make it improper to grant this motion.

My conclusion, therefore, is that the motion to punish the defendants for contempt should be denied.

The Week's Incorporations.

Los Angeles, Cal.—Auto Machine Works, under California laws, with $20,000 capital. Corporators not named.

Chicago, Ill.—Joseph B. McKeague Co., under Illinois laws, with $5,000 capital; to make automobiles and accessories. Corporators—James B. Leahy, K. Neale and J. McCarthy.

Springfield, Mass.—Geisel Automobile Station, Inc., under Massachusetts laws, with $5,000 capital. Corporators—George W. Cook, president; Adolf A. Geisel, secretary-treasurer.

Chicago, Ill.—Times Square Automobile Co., under Illinois laws, with $5,000 capital; to deal in automobiles and accessories. Corporators—E. S. Hartman, W. D. Huff, and A. O. Beck.

Jersey City, N. J.—Walden W. Shaw Co., under New Jersey laws, with $30,000 capital; to manufacture automobiles and other conveniences. Corporators—H. O. Coughlan, L. H. Gunther and J. R. Turner.

New York City, N. Y.—Hartog Auto Co., under New York laws, with $15,000 capital. Corporators—Albert Hartog and Samuel B. Hartog, Cumberland Hotel; Albert Hartog, Jr., 347 West 54th street, New York City.

New York City, N. Y.—Noslip Tire Protector Co., under New York laws, with $15,000 capital. Corporators—Woolsey A. Shepard, Charles B. Young, and Augustus S. Houghton, 111 Broadway, New York City.

New York City, N. Y.—Van's Auto Tire Co., under New York laws, with $10,000 capital. Corporators—Frank Van Tassel, 220 West 48th street; John Graham, 148 West 83d street, New York City; Frederick G. Hurst, Richfield Park, N. J.

New York City, N. Y.—Leakless Motor Tube Co., under New York laws, with $40,000 capital; to manufacture compound to stop or seal punctures in rubber tires. Corporators—S. K. Albright, E. S. Hopkins and C. H. Bennett, all of New York City.

Columbus, Ohio.—Columbus Garage & Machine Co., under Ohio laws, with $20,000 capital; to conduct garage and do general automobile business. Corporators—C. R. Hambleton, Fred M. Luchtenberg, C. S. Hasenzahl, O. L. Beathard and H. L. Thompson.

Steel Swallow Remains in Jackson.

The Steel Swallow Automobile Co., which intends to make light delivery wagons, has decided to remain in Jackson, Mich. The company received an offer to move to Hudson, but after considering the advantages of both places, chose to stay in Jackson. The stockholders have elected the following officers: President, F. W. Hahn; vice-president, Carl Eberle; treasurer, Louis F. Poor; secretary, D. N. Dearing; superintendent, W. L. Cummings.

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ROYAL'S CREDITORS TAKE ACTION

Vote to Reorganize Company on Basis Suggested by Receivers—Plan Adopted and Committee Appointed.

As a result of the meeting of the creditors of the Royal Motor Car Co., held in the factory in Cleveland, Ohio, on Thursday last, 20th inst., it is practically assured that the company will be reorganized on the basis suggested by the receiver, that is, by capitalizing its indebtedness, the creditors accepting preferred stock in payment of their claims.

A resolution to this effect was adopted and a committee of seven creditors appointed to carry out the plans. The committee is composed of C. E. Adams, vice-president and manager Cleveland Hardware Co.; B. W. Browne, president Great Western Oil Co.; H. E. Andress, representing Diamond Rubber Co.; William H. Foote, cashier Wyman & Gordon; S. F. Haserot, president Haserot Canneries Co.; H. H. Hill, secretary Cleveland Tanning Co.; H. S. Black, treasurer Ohio Brass Co.. The committee was given broad powers and has authority to proceed with the reorganization whenever it deems that a sufficient number of creditors has assented to the agreement.

The plan is to form a new corporation with $500,000 of 6 per cent preferred stock and $520,000 of common, $100,000 of the latter to be termed bonus stock, and of which 25 per cent. will be presented to the managing director and the remainder to whomever he deems worthy of it. The voting power will remain with the preferred share holders until 50 per cent. of their holdings have been retired, when the power will be divided with the common stockholders. The exact plan as proposed is as follows:

(a) A new corporation to be formed of the creditors to take over all the assets of the old company, the consideration of such transfer being the assumption by the new corporation of all the liabilities of the old company, and the issuance of common stock as hereinafter provided.

(b) Issue preferred stock in said corporation to an amount not to exceed $500,000, which preferred stock shall be preferred both as to assets and dividends, and shall be subject to 6 per cent. annual dividends, payable quarterly from and after April 1st, 1909. All preferred stock to be issued to present creditors in the manner hereinafter provided:

(c) Issue common stock of the new corporation to the amount of preferred stock of the old corporation, four hundred and twenty thousand dollars ($420,000), plus one hundred thousand dollars ($100,000), to be used as bonus stock, as hereinafter described; common stock to be issued to the old company to said amount of $420,000, and the bonus stock to be divided when all of the new preferred stock shall have been retired, and the book value of the new common stock is par; such division to be as follows:

Twenty-five (25) per cent. to the managing director, and the balance to the others in the discretion of the managing director.

(d) The net profits of the new corporation, after paying the dividends on the preferred stock, shall be applied to the redemption at par and accrued and unpaid dividends of the preferred stock; provided, however, that if the directors so elect, they may retain out of such net earnings as surplus, a sum not to exceed in the aggregate one hundred thousand dollars ($100,000). Said preferred stock is to be redeemed from the holders thereof pro rata, but not in sums of less than one hundred dollars ($100).

(e) The voting power to be in the preferred stock, and the common stock to have no representation on the directory until fifty (50) per cent. of the preferred stock shall have been retired. The voting power then to be divided with the common stock, on a basis of four to one.

(f) For all claims in excess of $100, one share of said preferred stock for each $100 of said claim, and one-half share of said preferred stock for each fraction of $100 equal to $50, and cash for fractional parts of $50.

(g) For all claims for less than $100 each, cash to the full amount thereof.

Dream Story of Packard's Purchase.

Because M. J. Budlong, a former president of the Electric Vehicle Co., Hartford, Conn., is about to become assistant general manager of the Packard Motor Car Co., Detroit, Mich., a fertile brain able to appreciate the stuff of which dreams are made, promptly set afloat a story that the Packard company would take over the bankrupt and idle Electric Vehicle plant and operate it as an Eastern factory. The report was printed in Hartford on Saturday last and raised false hopes in the breasts of hundreds of former employes of the Electric Vehicle Co. Four days later, the "news" reached that staunch European advocate and stock market booster, the New York Herald, which "featured" the rumor and added to it a few dreams of its own. Everything about the story is correct except the truth of it. The improbability of the Packard company's, or any other company's, purchase of a bankrupt plant which is weighted with nearly $2,500,000 of bonds, to say nothing of other heavy obligations, should be apparent to any one not given to dreams.

The New York Herald also concocted a tale that the sale of the Pope-Toledo factory to the Dayton Motor Car Co. practically had been consummated. The tiny grain of truth in the tale is that when fire damaged the Dayton plant, the Pope people courteously wired the Dayton company placing the Toledo plant at their disposal.

TWO RICHMONDS IN THE FIELD

Each Otherwise Named the Philadelphia Taxicab Co.—Prospective Fight for Quaker City Franchise.

Two rival taxicab companies of the same name, but incorporated in different States, are to make a fight for the privilege of introducing in Philadelphia a system of registered cab service similar to that now operated in New York, according to advices from the Quaker City. Scarcely had the Philadelphia Taxicab Co., of Pennsylvania, whose charter was approved by the governor of that State last week, begun the work of organization, when the Philadelphia Taxicab Co., of New Jersey, made its appearance. The Pennsylvania corporation was formed by the Corporation Trust Co., an organization that makes a business of obtaining charters for persons in New York hiding behind the name of their counsel. As the name of the real incorporators in both companies have not been divulged, Philadelphia is awaiting developments.

Jeffery Buys His Old Chicago Factory.

It transpires that the man who purchased the former Rambler plant in Chicago from the receivers of the Pope Mfg. Co. is none other than Thomas B. Jeffery himself. The factory is an impressive brick structure on North Franklin street, and was built by Gormully & Jeffery when their Rambler bicycle was in its heydey. It was taken over by the "bicycle trust" and in sequence became a Pope possession. In it the first Rambler automobile was developed. The price paid by Mr. Jeffery was $100,000. The plant was carried on the Pope books at $250,000, which is close to its real value.

Witherbee Gets Broadway Location.

The Witherbee Igniter Co., now located at 541 West Forty-third street, New York, has leased a part of the third floor of the Motor Mart, 1876 Broadway, and is making ready to remove its factory and offices to that address. The new location will afford some 8,000 square feet of floor space.

Botto Again Visits the Coast.

W. M. Botto, sales manager of the Palmer & Singer Mfg. Co., is making an extended tour of the West and the Pacific Coast. As he is familiar with the country he reports that he had experienced no trouble in interesting the trade in the Simplex and the other P. & S. cars.

To Make Motor Buggies in Massachusetts.

W. A. Shafer, Frank Dodge and J. R. Graves, formerly of the Crown Automobile Co., Amesbury, Mass., have organized in that city the Crown Motor Vehicle Co. They will make high wheeled motor buggies.

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An Unusual Proposition

ARE YOU AUTOMOBILE DEALERS MAKING MONEY?

If not, why not? Is it because your apparent profit is wiped out by after-sale contingencies? Is it because your business system is faulty, your methods disorderly and careless? Is it because you are located in a district where the line of cars you sell is not adapted or in demand? Is it because you are a skimmer, not doing the business seriously, as though you had no real place in business life? Is it because you consider the selling of automobiles a game rather than a business.

The fact that so large a number of retail automobile dealers are not making money, and I am happy to say that there are few Maxwell dealers among this class, is a matter of serious concern to those in the industry.

Now, you know me; you know that I must have a good deal of experience, that my plan of covering territory has been successful; that I know the business end of the automobile business; that my plans carry.

Now I have, like our friend from Boston, a remedy. Ha, ha, you say to yourself, pretty cute. He means to tell us to sell Maxwell Cars. Yes, that's part of it, but not the only part. I have deeper reasons.

To accomplish, I want first to get into communication with you, to become better acquainted. Let me send you The Co-Operator, our own automobile paper, free for three months. I will lead up to my plan in it. It will be a valuable educator, and in due course I will give you the complete details of my remedy.

Of course, The Co-Operator says a good deal about Maxwell Cars, but it has another mission to you. It will lead to a better understanding between us, so that later I can make you a lot of money.

Apropos of Maxwell dealers making money, it is because Maxwell Cars, while not yet absolutely perfect, are the nearest perfect, and because of their correct mechanical principles; unit construction; three-point suspension; natural water cooling; multiple-disc clutch; metal bodies; and all the other distinctive Maxwell features produce satisfied users, and every user becomes a salesman and a booster. Will you please cut out the blank below and send in at once? Let us begin the good work now.

Benj. Briscoe President.

Maxwell-Briscoe Motor Company

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, FEBRUARY 27, 1908

The A. A. A. and the Amateur.

Even a slight improvement is better than no improvement at all. On this principle, the amateur definition drafted by the A. A. A. racing board is a very welcome sign. It is evidence both of a desire to place automobile competition on the basis of real sport and of recognition of the fact that when cash comes in at the window, sport flies out at the door.

No man can be an amateur sportsman who competes for cash and the A. A. A.'s tardy recognition of that fundamental truth is a long step in the right direction. The A. A. A. rule will, however, still permit professionals to compete against amateurs, which is contrary to the letter and spirit of all other amateur rules, and is a lapse which will not only prevent the general and unquestioned acceptance of A. A. A. amateurs in other sports, but is one that will serve to defeat the very desirable object of encouraging and building up a class of unquestioned sportsmen. Of course, promoters may restrict races to amateurs but as in unrestricted events the professionals will be able to compete and as it is their competition that has caused and will cause the amateur sportsman to hold aloof, the improvement of the situation will be circumscribed. In such "mixed" events it is obvious that option of cash or plate as prizes must be afforded and it is equally clear that the shady amateur never will accept the cash unless he happens to win or unless the purse is sufficiently large.

The A. A. A. amateur rule is, therefore, a half-professional rule. Why generations of experience on the part of the rest of the world should be thus flouted or set at naught is past understanding. For experience, they say, is the best teacher.

The elimination of the silly stipulation that every one who chanced to be identified with the trade in any capacity was, ipse facto, a professional is a wise move; and while the underlying motive in relegating only demonstrators, testers and chauffeurs to the professional class, is understandable, it is not a fair one. No man's occupation decently can be made a test or measure of his sportsmanship. We can name some demonstrators—aye! and a few chauffeurs—who are educated gentlemen and better amateur sportsmen than some men of millions. Or does the A. A. A. rule mean that it is only while the men pursue those callings that they are professionals and that they become amateurs when they engage in other pursuits? The language of the definition easily is capable of this construction.

In one other respect, the definition fetches things too far. When the A. A. A. attempts to say that it will be the supreme judge of amateurism—when it relegates to itself the right to reinstate as an amateur a man declared to be a professional by any other sports governing body, its position becomes untenable and indefensible. Such an assumption of power is not merely arrogant, but discourteous, and would make ducks and drakes of all sports. It would bring the A. A. A. into disrepute and into conflict with every other organization in existence and render absolutely impossible the co-operation of those who may be anxious to co-operate with it. The wise heads of the A. A. A. should not permit such a provision to be placed on their books.

The other lapses in the proposed rule chiefly are those that will concern the A. A. A. racing board itself. The framers of the rule undoubtedly know to what they refer as "valuable consideration" and as "partial means of livelihood," but those elastic terms surely will return to vex racing boards of the future. In the absence of any requirement of registration, how promoters, or the A. A. A. itself, will be able to keep track of or distinguish the amateurs and the professionals, is past understanding. Apparently they will have to accept each competitor's personal assurance regarding his status. If this is not the case, will Chairman Thompson be able to supply on request a list of those comprising the two classes? If not, who will be able to do so?

The trouble seems to be that while "wrestling with the amateur problem" as a long and much traveled field of endeavor, it is a brand new one for the A. A. A. and the A. A. A. seems unable or unwilling to profit by the experience of the rest of the world, though willingness of the sort would greatly relieve its burdens. Happily, it is not yet too late for it to "be wise in time."

Relation of Design to Skidding.

Skidding and methods of preventing it, first and last, has been one of the most popular topics of technical and laical discussion ever broached. But aside from the two factors of steering angles and differential gearing, the parent subject of turning resistances, and, in fact, the entire static or dynamic condition of the vehicle sectionally and as a whole when turning, never has been brought to notice sufficiently, nor studied with the care and attention it deserves as being of vital importance to the design of the vehicle.

It is easy enough to compute the amount of force necessary to divert a moving body of known weight and velocity from a straight into a curved line of travel. How that force is distributed throughout the fabric of the automobile, and how the distribution of the resistance is to be effected, is at once a complex and difficult subject to deal with.

In a recent editorial in these columns relating to the subject of front driving and control of the vehicle, the suggestion was offered that, "the subject of transmission and traction losses on curves . . . . remains in its entirety to be investigated experimentally." That good progress in the preliminaries to this study is already being made is shown by frequent contributions

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from engineers on kindred matters. Typical of these, is the statement of H. W. Alden in his paper on roller bearings, printed elsewhere, that frequently the end thrust on the bearing of a front wheel may be fully equal to the radial load due to the weight of the car. "When turning a corner of twenty-five foot radius at fifteen miles per hour," he says, " . . . . the end thrust on that front wheel bearing which gets the maximum thrust is just about the same as its legitimate load." What may be the maximum thrust on a rear wheel bearing during a severe skid, he does not attempt to say.

Without this factor in its makeup, due to the necessity of self guidance as well as self propulsion, the motor vehicle problem would be identical with that of the locomotive so far as the mechanics of the matter is concerned. Structurally the organs representing this difference are the steering gear and the differential. The methods by which they are applied, however, serve to introduce sundry other considerations, such as the friction losses in transmission due to differential action, not only on curves, but whenever varying adhesion causes one wheel to travel faster than the other; the traction losses due to side-slip in the steering wheels; skidding in all its phases; and in fact quite the whole behavior of the vehicle on the road.

These are the characteristic and determining organs of the vehicle. Yet, oddly enough, while motors, transmissions, bodies, and accessories have been undergoing tremendous improvement during the past few years of automobile development, these two groups remain identical in principle and largely the same in construction as developed in the early stages of the industry.

New Jersey's Glorious Opportunity!

The tunnel under the Hudson River which connects New York and New Jersey formally was opened on Tuesday last. Among the invited guests on the first official train were Governor J. Franklin Fort and Senator Joseph S. Frelinghuysen of New Jersey. The fact furnishes ground for suspicion that shortly there will be introduced into the legislature at Trenton a bill requiring all New Yorkers who use the tunnel route to pay a registration or other admission fee and to display a tag. And why not? As the Jerseymen pay taxes for the upkeep of the sidewalks, why should not the "outlanders" pay for the wear they impose on them? Why should non-residents be exempt? Give them a taste of "Jersey justice." Governor Fort! They wear out the sidewalks. Children under 16 years, $1 per year; persons over 16 and under 25 years, $5; over 25, $10—that's a proper tariff! Think of the glorious opportunity—of the large, elegant sum it would add to New Jersey's income, Mr. Frelinghuysen: Soak it to 'em! They're easy.

Value of Engineering Departments.

It is difficult to form an adequate opinion as to the amount of research and experimental work which is legitimately connected with the production of a thoroughly high grade and reliable motor car. Many of the smaller makers totally underestimate it, as is plain to see. Some few makers, on the other hand, have an exagerated notion of the intrinsic value of their experimental departments which is costing them very dear. The status of the experimental department is then, wholly unsettled in the industry at the present time.

Even without the intent of producing a striking amount of novelty with each new model, the amount of plant which is actually required in order to prove the materials of construction and test out the product step by step and in its assembled form is far and away beyond the comprehension of the mere man in the street, as it is to many of the less advanced producers themselves. As is the case with other non-productive departments of the factory, its utility is no more apparent to the casual observer than its effect is visible to the naked eye. It is only by comparing the outputs of factories where such departments exist in their best form, with those of others in which they do not exist, or if so, only in a limited way, that the real benefit which they carry becomes appreciable. Even then, the difference is more apt to be credited to system rather than to its rightful cause.

From the manufacturer's standpoint it is an open question how much of the capital of the plant properly may be tied up in testing apparatus and outlaid in testing operations. Obviously the economic policy becomes unwise just so soon as it begins to encroach upon the standard quality of the product. The cost of testing cars and parts is really a fixed charge. It cannot be too high so long as its effect is traceable in the output and sales.

The cost of developing new ideas is even more difficult to regulate wisely. There is always the tantalizing possibility of untold wealth hanging about the vague and promising new idea, which tempts to the sinking of profits in experiments, experts' salaries, and commercial ventures not wholly warranted by business sense. Certainly design must not be permitted to stagnate so long as direct and evident improvement is possible. Yet progress demands a constant attitude of quest for improvement. The difficulty is to distinguish between the probable paying or non-paying quality of the proposed improvement as well as of its initial cost.

Some clamor loudly for the "engineering era" in automobile design and construction. No regime imaginable could be more acceptable than one under which cars should be built with sufficient approximation to engineering principle to stand up for a reasonable length of time, even under severe useage. But it must be understood that industrial stability demands that henceforth the engineering department shall pay its way, A close balance must be struck between the paying and non-paying qualities of these expensive and essential, though non-productive elements of the producing mechanism.

COMING EVENTS

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 2-8, San Francisco, Cal.—California Woman's Automobile Club's show in Coliseum.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 15-April 1, Omaha, Neb.—Omaha Automobile Dealers' Association's annual show in the Auditorium.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-24, New Haven, Conn.—New Haven Automobile Dealers' Association's show in Music Hall.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

March 23-28, Indianapolis, Ind.—Indianapolis Automobile Dealers' Association's show week.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association's annual show in Duquesne Garden.

April 24, Westchester County, N. Y.—Briarcliff trophy race for stock cars.

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ECONOMY RUN ON FROZEN ROADS

Twenty-three Participants in Long Island Contest—More Than Half "Economized" on Running Time.

Twenty-three cars competed in the economy test on Tuesday last, 25th inst., promoted by the Long Island Automobile Club. All but four finished the 242 miles run over frozen Long Island roads, which was a much better showing than had been looked for. Just who won the contest is not known, as the technical committee of the Long Island Club will not have the results figured for several days.

The event of Tuesday was supposed to have been an economy test, but only about half of the contestants gave serious thought to the amount of gasolene and oil they used. The others were either too cold or too anxious to "hit it up." As official checking in could not, by the rules, begin until 9 p. m., and as thirteen of the cars that finished checked in before that time, it will easily be seen what is meant.

The start was made from the Long Island Automobile Club's house, at 360 Cumberland avenue, Brooklyn, beginning at 6 a. m., the cars being dispatched at one minute intervals according to horsepower The route took them to Babylon, Southampton, Patchogue, and Amagansett, instead of to Montauk Point, as first intended.

The first car to be put out of commission was W. E. Shuttleworth's Haynes, which retired east of Patchogue. The Hol-Tan, driven by V. A. Neilson, got into difficulties at Sayville, on the return trip. A strut rod gave way, allowing the axle to sag, and the driving gears to bind, the friction eventually heating the parts and twisting off the driving shaft.

The mishap which put David Mahoney (Lozier) out of the running on the outward leg was peculiar and regretable. A team with a stupid driver, woman and child as freight, unexpectedly turned across the road leading from Southampton toward Amagansett. It was a case of either running



JOHN HOLM (STUDEBAKER) NEGOTIATING THE FROZEN RUTS



R A. VAIL (FRANKLIN) AND OTHER CONTENDERS HALTED FOR LUNCH

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head on into the entire outfit or turning sharply into the bank, and Mahoney took the latter course. The result was that both left wheels were smashed when the car struck the bank.

The other car which failed to report was the Buick, driven by Hugh Gibson. It broke a wheel at a point three miles east of Patchogue, and a new wheel could not be secured in time to reach Brooklyn within the specified time limit. Punctures were frequent, Charles A. Carlson (Winton) having suffered seven.

The cars arrived at the finish in Brooklyn from 4 o'clock in the afternoon until half-past ten at night, the last one reporting being the little single cylinder Cadillac of James D. Rourk. This car would not have been the last had it not slipped a wheel, which let the axle down to the ground. When new bearings had been secured the run to Amagansett was resumed with success.

As stated before, the committee has not announced the awards, but the cars finished in the following order:

W. A. Flinn, Acme; W. A. Bowers, Thomas-Detroit; Kingsley Swan, Stevens-Duryea; C. G. Arnold, Pope-Hartford; H. Michenor, Lozier; Robert Morton, Pullman, J. W. Mears, Acme; W. Walton, Acme; W. Birdsall, Mora; John Holm, Studebaker; Philip Hines, Pope Hartford; H. K. Knepper, Freyer Miller; D. C. Teeter, Rambler; R. A. Vail, Franklin; C. A. Carlson, Winton; I. C. Kirkham, Maxwell; C. Hosley, Maxwell; H. A. Martin, American Mors, and James D. Rourk, Cadillac.

The awards will be made on the basis of cost per passenger, including operator and observer, for fuel and lubricant consumed. Gasolene is charged at the rate of 25 cents per gallon, and lubricating oil at $1 per gallon. No penalizations were made for repairs, replacements of adjustments to a car or equipment. The first award will be a trophy costing not less than $200; second prize a trophy valued at $100, and third prize, one costing not less than $50.

There were four controls—at Babylon, Southampton, Patchogue and Amagansett, one hour being allowed for luncheon.

Milwaukee Postpones Its Contest.

The three day reliability run of the Milwaukee Automobile Trade Association, planned for Wednesday, Thursday and Friday of this week, has been postponed until next month, and will occur between March 10 and 25. This action was made necessary because of the impossibility of some of the roads to be traversed on the route selected The committee has provided for three classes, as follows: Class A, 1907 or 1908 stock touring cars, runabouts or roadsters, costing $3,000 or over; Class B, 1907 or 1908 stock touring cars, runabouts or roadsters, costing from $1,800 to $3,000; Class C. 1907 or 1908 stock touring cars, runabouts or roadsters, costing $1,800 or under.

Endurance Run with Sealed Bonnets.

The Harrisburg (Pa.) Automobile Club has decided to make its endurance run on May 4 and 5 a sealed bonnet contest as well, and R. H. Johnston of New York has been asked to act as referee. The route will be from Harrisburg through Lebanon, Reading, Allentown and Easton to Philadelphia, the first day. The return journey will be made by way of Norristown, Reading, Lancaster, Marietta, Mount Joy and Middletown, to Harrisburg. Four classes have been provided for as follows: Touring cars costing $2,250 and over; touring cars costing under $2,250; runabouts costing $2,000 and over, and runabouts costing under $2,000. All working parts will be sealed and a technical committee will examine the cars for mechanical defects at the conclusion of the run.

French Garage Regulations Revised.

A new set of garage regulations has just been issued by the French Chambre Syndicale d'Automobile which fixes the charges for garaging of cars at rates representing about a 50 per cent. increase over the former schedule. The storage and washing charges per month vary with the length of the vehicle. For a car up to 9 feet 9 inches in length, the storage charge is something like $7.50, and the cleaning is rated at $10. From this the charges increase proportionately to $12 for storage and $13.50 in round numbers, for washing. The daily charge for storage alone is 75 cents, while in the event of the chauffeur cleaning his own machine, a charge of about $2 a month is made for the water used.

Alcohol Fuel Test for Motor Cabs.

An alcohol fuel test for motor cabs, is to be one of the features of the industrial vehicle trials to be held under the auspices of the Automobile Club of France in May next. Competing vehicles will be divided into classifications according to the number of cylinders carried by their motors, and their bore, the basis being the single cylinder motor with a limiting bore of 100 mm., while the maximum size for four cylinder motors will be 80 mm. The weights must bear a certain relation to engine capacity as well, 1,000 kilograms being the limiting weight for the single cylinder cars having engines of less than 100 mm. bore. The rules provide for a maximum speed of 30 kilometres per hour, and place a restriction on the number of spare tires which may be employed during the trials. After a series of preliminary daily runs, the successful vehicles will be subjected to a final test which will be run on a kilometre-ton basis.



I. C. KIRKHAM (MAXWELL)



D. C. TEETER (RAMBLER)

Savannah Declares Holiday for Racing.

The Common Council of the city of Savannah has passed a special ordinance declaring March 18 and 19, the dates of the stock car races in that city, to be special holidays, and this has been followed by a proclamation from Mayor Tiedeman to the same effect. As a result, the city's institutions, trade and banking organizations will be closed on those days, and the people generally will forsake business to go to the races.

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"RACERS" RESTING IN CHICAGO

American Car Leads the Way, After Strenuous Struggle Through Snow—Horses Play Important Parts.

Although an Arctic explorer predicted that if the contestants in the so-called New York-Paris race ever succeeded in getting to Alaska the contest would develop into a struggle between them to see who could procure the most dogs in the shortest period of time, dismantle the car and load it on sleds to be pulled by the canines, reports from snowbound Indiana show that it already has developed into a call for horses instead of dogs. Whichever of the five contestants can secure the most horses and the largest crews of rural snow shovelers is the one that makes the greatest headway.

"This is no race," wires Bourcier St. Chaffray, of the DeDion outfit, to the New York newspaper promoting the American end of the affair, and the Frenchman seems to have guessed right the very first time. It is an endurance contest but not in the accepted sense; it is more of a combination horse-pulling and snow-shovelling contest.

Chicago, 1,043 miles from New York, was reached by the leading Thomas car, Tuesday afternoon. The French DeDion and the Italian Zust had progressed as far as Michigan City, 987 miles, while the German Prothos was last reported at Ligonier, Ind., 912 miles. The Motobloc, the other French car, had gotten to Kendallville, Ind., Tuesday, and at last reports was still going on.

Roberts, in the Thomas car, has had a terrible time of it in the last week. Since he left Kendallville, Ind., six days ago, he has covered only 152 miles, an average of 25 1-3 miles per day. Much of this distance was accomplished with the aid of horses and large crews of snow shovelers, while more of the ground has been covered on rural trolley tracks, which necessitated much bumping over railroad ties and trestles. In that time his longest day's run was on Thursday, from Burdick, Ind., to Chicago, 47 miles. The day before only 9 miles were covered, from Michigan City to Burdick, and this distance was literally dug and pulled through yard by yard.

Roberts's experience has been the experience of the others. The cars have had to be pulled through anywhere from two to twelve feet of snow in Indiana and the farmers are reaping a harvest. According to the correspondent in the Thomas car it has cost $800 to cover the 64 miles between South Bend and Hobart, while the mile and one-half of snow drift near Burdick station, reached at 7 a. m. Tuesday, cost the Thomas outfit $95. This went to the farmers for digging the car out of the drifts and using their horses to pull it through the smaller ones. All the other drivers report similar experiences.

It was a relief to Roberts and his fatigued crew when they sighted Chicago on Tuesday afternoon. In the fourteen days since his departure he has lost twenty pounds in weight; he looked it when he reached Chicago. Part of the last day into Chicago was covered on the tracks of the Lake Shore and the Elgin, Joliet and Eastern railroads. As Chicago was entered ten cars from the Chicago Automobile Club met the Thomas car and escorted it to the club house, where the crew got their first real rest since leaving Buffalo. The Thomas car will be thoroughly overhauled in Chicago and will not leave before this morning (Thursday).

Although Roberts has had a strenuous time in leading the way to Chicago the foreigners have had just as hard a trial in



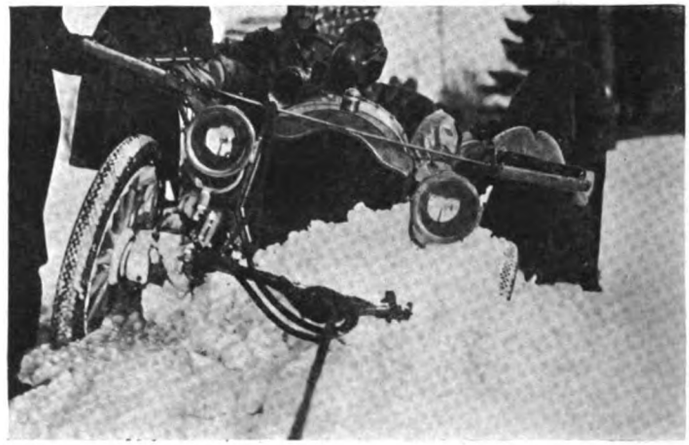
WHEN REAL HORSEPOWER WAS APPLIED



"BUMPING IT" OVER THE CROSS TIES



ROBERTS CHARGING THROUGH THE INDIANA SNOW



WHEN SHOVELS AND HORSES AGAIN BECAME NECESSARY

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their rear chase after the American car. If Roberts and his crew were tired when they reached Chicago, the foreigners are practically "all in." Maas and Knape, on the German car, are about used up and Lieutenant Koeppen, the other member of the German party, has gone on to Chicago by train to arrange for extra tires and parts so the car will not be delayed when it reaches the Windy City.

As was expected the French DeDion and Italian Zust cars reached Chicago last night (Wednesday). The Thomas crew spent the day resting in Chicago, and the Frenchmen and Italians will remain to-day and are expected to leave with the Thomas car to-morrow.

The entry of the DeDion and Zust into Chicago afforded some excitement, as it prompted a good natured race between the two cars. Nearly one hundred cars acted as escort and a brass band helped make some enthusiasm, although it could not be stopped from playing "We Won't Get Home Till Morning!" It wasn't the case for the Zust beat the DeDion to the club house by just one miute,arriving at 6.32 p. m., after which banquets were in order.

The German Prothos car was reported at 3 p. m. yesterday at Elkhart, Ind., having covered 932 miles, while the Motobloc was at Goshen, Ind., at 5 p. m.

Probably the most disagreeable incident of the contest occurred on Tuesday night, when the Motobloc car was looted of its entire outfit, according to a dispatch from Charles Godard, its commander. It may have been the sight of two cases of champagne strapped to the car which prompted the loot, but anyway, according to Godard, the car was left in a barn at Goshen, Ind., over night. When he examined the car the next morning it had been stripped of every thing, including the champagne cameras, films, guns, tools, ammunition, supplies, clothes and even the crew's extra changes of linen. Godard states that the authorities refused to aid them in any way and that their inability to speak English perfectly caused the police to regard them with suspicion. They proceeded without having found a trace of the thieves.

What has become of the "independent" which left New York a day before the "regular," by a different route, but also bound for Paris, no one knows or seems to care. The three men on the car had a squabble between themselves when they got to Philadelphia, and one of them, LeLouvier, got his dander up and went back to Paris. The others continued but have not been heard from since.

Larned Launches Its Club.

Fifteen automobilists of Larned, Kan., have formed the Larned Automobile Club with these officers: President, D. A. Ely; vice-president, E. T. Eggleston; secretary-treasurer, R. H. Moffett; executive committee, J. H. Boisseau, A. A. Doerr and Dr. Dillon.

MIDWINTER ENDURANCE RUN EASY

Fourteen out of Twenty Starters in Bay State Contest Made Perfect Scores—Three Failed to Finish.

Beneath skies that were a reminder of June, but over roads that showed earmarks of winter, twenty cars rolled 135 miles on a triangular course from Boston to Providence, Worcester and return last Saturday, 22d inst., in the annual mid-winter endurance run promoted by the Bay State Automobile Association. The test was easy, for of the twenty cars that started, fourteen finished with perfect scores, three had a small number of points against them for minor reasons, while three were considered withdrawn because they did not report at the finish.

It was just one minute after seven o'clock when Frank Wing, in the Marmon, got the word to start, and at one minute intervals the remaining nineteen left Commonwealth avenue, Boston, headed for Providence. Walpole was the first checking station and all the cars reached there on time and in good order. From Walpole the route led through Attleboro and Pawtucket to Providence, which was due to be reached at 9.40 a. m. Up to this point the roads had been in very good condition and all the contestants, with the exception of Robbins (Springfield), reached there on time. The drivers were allowed to replenish gasolene, oil and water tanks at Providence.

It became evident that the schedule was too easy, so ten minutes was cut off the run from Providence to Uxbridge. This was considered the hardest part of the trip, the deep frozen ruts causing many tired arms. All managed to get through, however, except Dennison, in the Knox, who stopped near Uxbridge. At Woonsocket the endurancers got their first ovation. Crowds four and five deep lined the sidewalks.

The schedule time was further reduced from Uxbridge to Worcester, where the dinner stop was made, and from the latter place to Boston. The intermediate checking station was at the Wayside Inn, in Sudbury, Mass., famous as the scene of that story telling bout described by the poet Lonkfellow in his collection of "Tales of a Wayside Inn."

When the cars reached Boston they were taken to the big White garage where they were given over to the technical committee, which, after considerable deliberation decided that fourteen cars were entitled to first class certificates for having made perfect scores. The three cars that were penalized were V. A. Charles's Rambler, which lost four points because a needle point was adjusted; Oliver Light's Thomas Detroit, five points on account of a stalled engine, and J. W. Robinson's Stevens-Duryea, which had eight points charged against it for repairing a broken fan belt.

The summary follows:

Walter Jones, Studebaker	Perfect
Frank Wing, Marmon	Perfect
C. E. Whitten, Thomas Detroit	Perfect
J. Ruggles, Atlas	Perfect
William Bourque, Knox	Perfect
Walter White, White	Perfect
Hal K. Sheridan, White	Perfect
A. H. Dorsey, Thomas Flyer	Perfect
Fred Pratt, Reo	Perfect
J. C. Kennedy, Austin	Perfect
J. H. Hobson, Oldsmobile	Perfect
E. W. Williams, Rambler	Perfect
Theodore Young, Franklin	Perfect
Harry Minchenor, Lozier	Perfect
V. A. Charles, Rambler	4 Points
Oliver Light, Thomas-Detroit	5 Points
J. W. Robinson, Stev.-Duryea	8 Points
L. Robbins, Springfield	Withdrawn
A. E. Dennison, Knox	Withdrawn
L. B. Harris, Winton	Withdrawn

Despatch Carriers Make Good Progress.

Starting six days after the cars in the so-called New York to Paris race, the 30 horsepower Studebaker car, which is carrying a message from General Frederick D. Grant, of Governor's Island, N. Y., to the commanding officer at Fort Leavenworth, Kan., in an attempt to prove the value of the automobile in carrying dispatches between army posts, reached Chicago on Tuesday, five minutes in advance of the leading car in the around-the-world snow-shovelling contest. The car left New York City on Tuesday, 18th inst., and reached Albany, 150 miles, at 11:15 o'clock that night. At 10 o'clock the next morning it was reported at Fayetteville, and at Auburn, 325 miles, at 4 o'clock that afternoon. Thursday morning the car rolled into Rochester, 396 miles, after being held up in a snowdrift all night. Erie, Pa., was reached Thursday night and Cleveland at 4:21 a. m. Friday. William Walls and Charles Hammond alternated at the steering wheel, driving night and day, which explains how the car made such astonishing mileage through snowdrifts which baffled the heavily laden New York-Paris contestants. These cars were passed one by one, the last one being overtaken at Hobart, Ind., twenty miles from Chicago. The latter city was reached at 4:20 p. m. Tuesday, 24th inst. The Studebaker car, by the way, is using chains on the wheels but is fitted with the Continental anti-skid red rubber tires.

Ohio Non-Stop Test Still Continues.

At last accounts, the Franklin non-stop and mileage test which was undertaken on February 11 by the Sid Black Automobile Co., the Franklin agents in Cincinnati, was still progressing without interruption, the odometer registering more than 2,500 miles. Four expert drivers are employed, alternating every six hours, and being accompanied by two observers. The 28 horsepower car employed has encountered some villainous roads and equally vile weather, but so far has run without hitch or skip.

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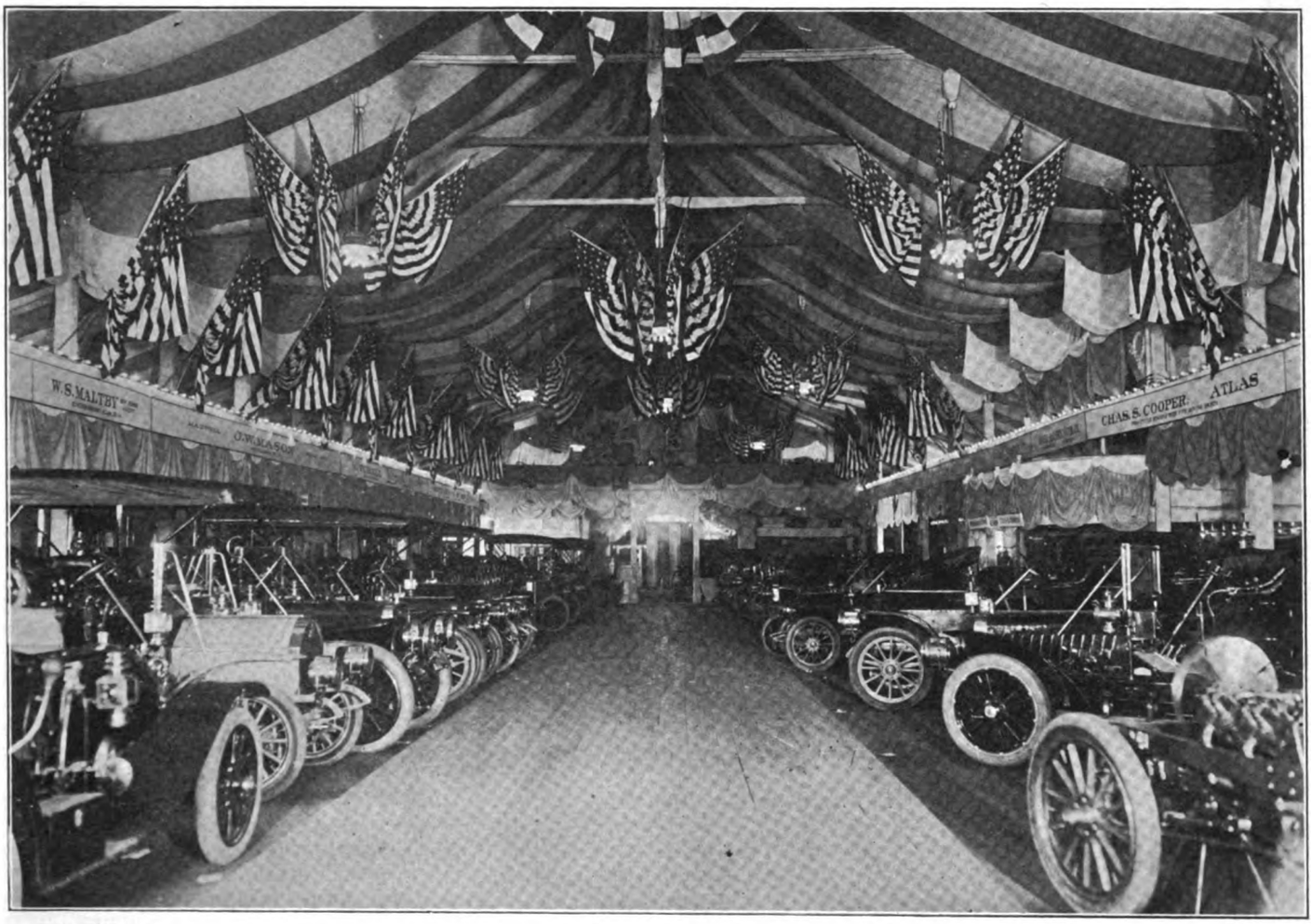
THREE MAYORS AT NEWARK SHOW

Brilliant Opening of New Jersey's First Annual Automobile Exhibition—Representative List of Cars Staged.

With congratulations from the mayors of three cities and in the presence of several thousand people, the first annual show of the New Jersey Automobile and Motor Club and the New Jersey Automobile Trade Association was launched at Electric Park, Newark, last Friday night, 21st inst. Mayor Jacob Haussling, of Newark, officially opened the show and took occasion to compliment the local motorists upon the splendid result of their first endeavor. The other two mayors who lent official dignity to the opening night were Isaac Shoenthal of Orange, and William Cardwell of East Orange.

Newark possesses few buildings with floor space sufficient to hold a moderate sized automobile show, and this fact was apparent on Friday night, and on Washington's Birthday, when the small Electric Park Auditorium was fairly packed.

White and yellow bunting in alternate stripes have been used to drape the ceiling, and strips of the same material have been carried down to within ten feet or so of the floor on each side of the oblong room. At the end of the main aisle furthest from the entrance is a large electric sign with the words "Automobile Show" flanked on either side by heroic size gilded eagles, behind which are festooned flags of all nations. Clusters of American flags on poles are hung every few feet apart along the sides of the hall, fastened to the pillars on each side of the automobile show spaces, which are divided by the main aisle down the center of the hall and by two small aisles near the walls. The accessories exhibitors have been placed along each side wall and the moving picture entertainment, without which no local show would be complete, has been located in a balcony just inside the building.



GENERAL VIEW OF THE AUTOMOBILE SHOW IN ELECTRIC PARK AUDITORIUM, NEWARK, N. J.

Thirty-three different makes of cars are shown, and twenty-two accessory exhibitors display their wares, the full list of exhibitors being as follows:

Greene Motor Car Co., Oldsmobile, Locomobile and Pope-Waverly; Calvert-Zusi Auto Co., Winton; Hygrade Motor Car Co., Ford; Motor Car Co. of New Jersey, Autocar, Northern, Cadillac and Packard; W. S. Maltbie, Corbin; J. W. Mason, Stoddard-Dayton and Maxwell; Mitchell Motor Car Co., Mitchell; Carl H. Page Co., Peerless, Ellis Motor Car Co., Pierce and Knox; Star Motor Co., Pullman and Napier; F. E. Boland Motor Co., National; Brush-McLaren Co., Brush; Rickey Machine Co., Marmon; Sheldon W. Case, Holsman; Allen-Kingston Motor Car Co., Allen-Kingston; Charles S. Cooper, Atlas; Essex Automobile Co., Jackson; Garford Motor Car Co., Garford; J. H. Johnston & Co., Grout and Cameron, H. J. Kochler, Buick and Waltham; A. G. Spalding & Bros., Stevens-Duryea; the White Co., White.

H. T. Alexander & Co., American Auto Rim Co., Auto Tire Repair Co., Brick Church Auto Supply Co., Century Optical Co., Electrical Maintenance & Repair Co., Ellis Motor Car Co., Electric Motor Equipment Co., George A Haws, Adolph Karl & Co., Lovell-McConnell Mfg. Co., National Oil & Supply Co., Newark Garage & Repair Co., Newmastic Tire Co., New York Auto Top & Supply Co., Oriental Rubber Co., W. S. Sheppard, C. F. Splitdorf, Standard Oil Co., Tea Tray Co., O. W. Young, and Louis J. Wurth.

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PRIVATE GARAGE CONSTRUCTION

Some of the Problems Involved—Suggestions by an Architect Concerning Dimensions and Essential Features.

As the number of private garages or motor houses increases, it becomes apparent that the construction of these small repositories is quite as much of a problem as that involved in the evolution of the larger structures which are intended to house a great number of vehicles. One of the particular embarrassments is the fact that the house made to fit one car, may be too small to accommodate its successor, while the requirements of a really suitable structure of this sort, forbid it from being made readily extensible if absolute permanence is desired.

In this connection an outline of the more essential requirements of the garage, embodied in a paper read before the British Architectural Association recently, by C. Harrison Townsend affords an interesting and concise summary. As he indicates, the starting point of the garage problem is the area required to store the car, and the amount of head room it is likely to need. The possible replacement of the car by a larger one, must be considered, while possible changes in design of all machines, such as have been responsible for the enlargement of a garage elevator three successive times, in one case which he instances, also must be allowed for.

The following table gives the general overall dimensions of the different models produced by a single large manufacturer, and reveals the amount of difference existing between the volumetric requirements of different machines:

Type.	Wheel Base. ft. in.	Length. ft. in.	Width. ft. in.	Height. ft. in.
14-16 Horsepower.				
Side entrance	8 4	12 6	5 2	5 3
" " (hood up)	8 4	12 6	5 2	7 5
" " (hood folded)	8 4	13 6	5 2	5 6
Single landaulette	9 0	13 0	5 2	7 0
Limousine	9 0	13 0	5 2	7 0
City carriage	6 10	10 8	5 5	7 4
16-20 Horsepower.				
Side entrance	9 0	13 0	5 3	5 5
" " (hood up)	9 0	13 0	5 3	7 7
" " (hood folded)	9 0	14 0	5 3	5 8
Seven-seater side entrance	9 9	13 10	5 3	5 5
Three-quarter landaulette	9 9	13 10	5 3	7 7
Limousine	9 9	13 10	5 3	7 7
26-30 Horsepower.				
Side entrance	9 3	13 4	5 7	5 5
" " (hood up)	9 3	13 4	5 7	7 7
" " (hood folded)	9 3	14 4	5 7	5 8
Three-quarter landaulette	10 0	14 1	5 5	7 8
Limousine	10 0	14 1	5 7	7 8
40 Horsepower.				
Side entrance	9 8	13 8	6 0	5 6
" " (hood up)	9 8	13 8	6 0	7 8
" " (hood folded)	9 8	14 8	6 0	5 9
Seven-seater side entrance	10 4	14 4	6 0	5 6
Three-quarter landaulette	10 4	14 4	6 0	7 8
Limousine	10 4	14 4	6 0	7 8

N. B.—In some cases the head lamps mean a further increase in length.

"For giving the car proper attention space should be arranged between it and the walls at each side and at each end," says the authority in question. "This should be at least 2 feet 6 inches where a pit is provided, but if the latter does not exist, and the car is raised for underwork, the space should be 3 feet 3 inches. In the case of several cars standing side by side, there need only be 2 feet 6 inches or 3 feet between them. So far, then, we have reached the internal size of a one-car house 16 feet + 2 feet 6 inches, or 3 feet 3 inches + 2 feet 6 inches or 3 feet 3 inches = 21 feet or 22 feet 6 inches for the length, and 6 feet + 2 feet 6 inches or 3 feet 3 inches + 2 feet 6 inches or 3 feet 3 inches = 11 feet or 12 feet 6 inches as the width.

"The height of the doors should be sufficient to pass in a car with the hood up, plus its luggage rail, and, possibly, tires on the roof, or, say, 9 feet. They should be at least 8 feet wide in the clear, and may be either steel revolving shutters or they may be hinged—opening outwards, of course—and preferably under a pent roof. Finally, sliding doors may be employed—sometimes the most difficult arrangement to provide for. . . . .

"The walls should either be faced—at all events, to a height of about 4 feet from the ground—with glazed bricks, or lined with tiles. They should have a coved brick or tile at their junction with the floor, to avoid the harboring of grease and dirt. All angles to recesses—such as that for the hydrant or the radiators—should be rounded, and there should be as few projecting features as possible. Just above the floor level in each external wall should be inserted air gratings. They should, where possible, be placed behind the small radiators.

"In the large number of garages cement is laid to a smooth finish and to falls. I do not, however, think this a very efficient material. The action of the dropped oil on its surface tends to rot and 'take the virtue' out of the cement, and granolithic distinctly offers less opportunity for this. Stone flags, laid not on a concrete bed but on sleeper walls for the advantage of the air space beneath thus obtained, seem to add still further to the risk of the dangerous sparks that may result from the car coming in or going out with a chain or stud anti-skid appliance fixed on the tires. Again, unless, the space beneath is of considerable size—a cellar, in fact—there would be the danger of its forming a chamber where explosive gas could collect as the result of leakage.

"The drains should not be underground pipes, but should consist of open, half-round channels.

"In cases where it is incumbent to make use of the pit, the best size for this is 6 feet by 3 feet by 4 feet 6 inches or 4 feet 9 inches deep. Its sides should be lined either with glazed bricks or tiles, and it will be found convenient to form in them a recess on each side in which the chauffeur when at work can place his tools from time to time. Iron ring steps afford access to it. An American expert strongly advocates the extension of the pit beyond the outer wall of the garage, as tending towards a certain amount of ventilation at all events, as giving means of escape for the chauffeur, who would otherwise be shut up in a trap in case of fire. . . . .

"It is of importance that there should be no risk of the temperature of the motor house falling to freezing point. As regards, however, the heating and consequent drying of the atmosphere of the motor house, there are two conflicting claims to be satisfied. Expert carriage builders plead on behalf of the painted body and wheels for a house 'which cannot be too dry'; while Dr. C. O. Weber, the authority as far as rubber is concerned, states that tires are likely to 'keep distinctly better in a damp that a dry room.' Keeping a balance between these two claims we find that the motor house is best when dry, but not unduly so. Its temperature should be about 60 degrees F. The heating apparatus, of course, should have no opening from the motor house, but be arranged with external access, and a low pressure system with radiators will be found the best. These may be placed as found advisable, but in a garage of any size there will be a considerable advantage if a cupboard be provided containing a small radiator, to be made use of when drying rugs or cushions, and with ventilation to allow the escape of the resultant steam. . . .

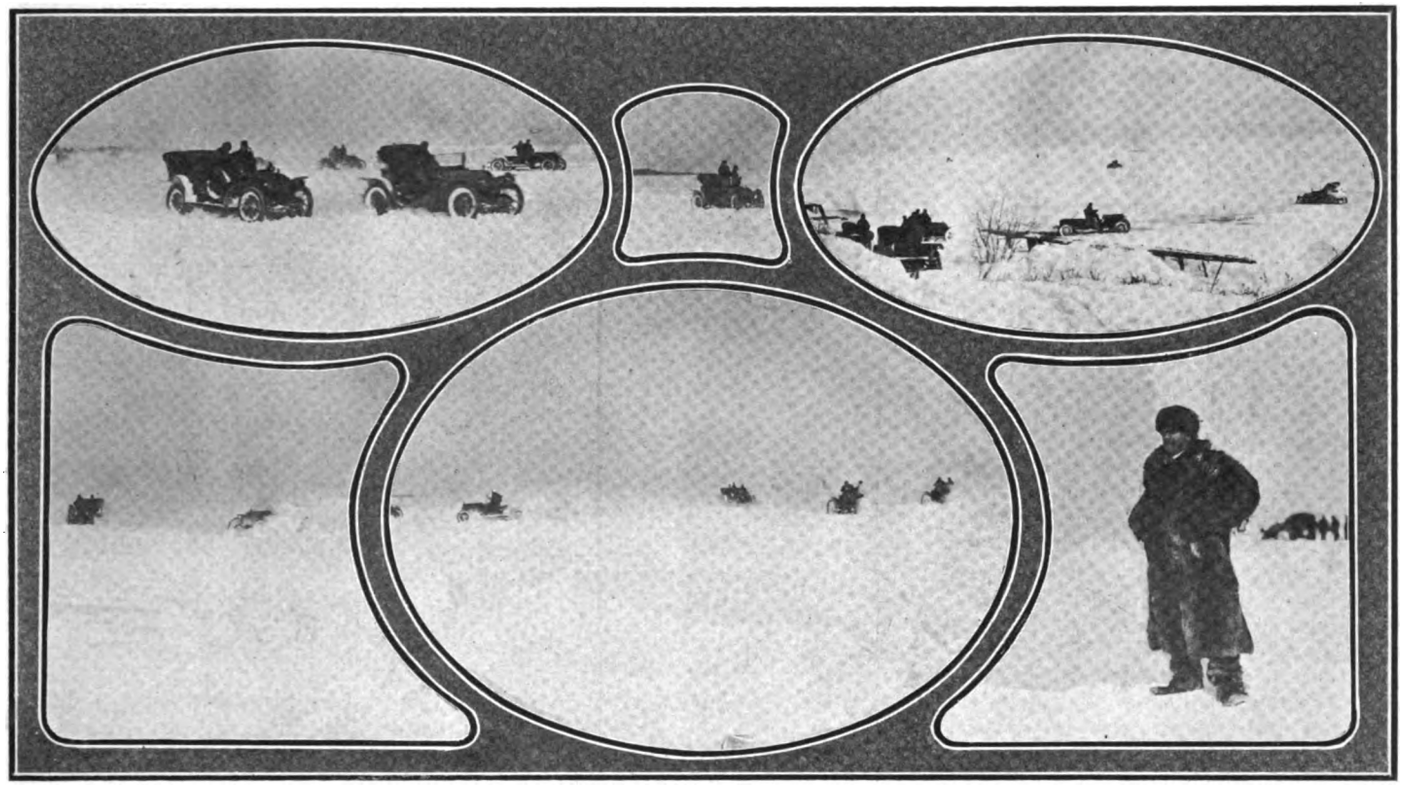
"The storage place for tires, testing apparatus, pumps and spares generally," he says, "should be distinct from that in which cloths, cleaning oil, brushes, waste, etc., are kept on metal-covered shelves, and with proper ventilation. There should be rack accommodation for rugs, extra cushions and the like."

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SPORT ON A CRYSTAL MOTORDROME

Frozen Lake Utilized for Packard Tests and Experiments—Fun with a Practical End in View.

The cold winds of winter having served to coat with thick ice the water of Lake St. Claire, in Michigan, it occurred to the fertile mind of the Packard management that right at hand was a perfect course over



PACKARD TESTS AND EXPERIMENTS ON THE FROZEN SURFACE OF LAKE ST. CLAIRE—GENERAL MANAGER JOY LOOKING ON

which to drive their cars in a series of tests and experiments as conclusive in their results as would be obtained by many miles of summer driving, and with far more of real sport and specularity.

As a result for several weeks the testers of the Packard Motor Car Co. have been taking advantage of the opportunities for testing cars offered by the snow covered ice on the lake and each day there have been a dozen automobiles racing and chasing through the snow drifts, and up and down the snow shrouded banks, making the snow fly in picturesque fashion, as the accompanying illustrations serve to show.

To the Packard people the opportunity for fast driving on the ice appeared as somewhat of the nature of sport rather than work, and since the last heavy snow storm the administration, engineering and testing departments have been busy for days driving cars through the snow clogged thoroughfares leading out of Detroit, and engaging in races on the frozen lake without thought or fear of police interference, even General Manager Joy himself having been unable to resist the temptation.

Remedy for Leaky Radiators.

Edwin F. Field, of Auburn, Me., has "discovered" a panacea for leaky radiators, which is claimed to be the long-lost and much-sought-for boiler sealing compound, the lack of which was responsible for so many heavy repair bills in the halcyon days of the teakettle boiler. In fact, Mr. Field's discovery is the result of many years of experiment with boilers of this type. Though intended primarily for sealing a leaky boiler, however, the remedy is equally applicable to radiators which lack the essential watertight feature. The medicine consists of a black powder of secret composition which, when dumped into the offending boiler or radiator at once finds its way to the affected part, stopping up the hole or holes by a sudden and silent process and leaving behind it a permanent repair, affecting only the injured locality.

Coasting Over Sharp Gravel.

It is of small consequence whether a patch of loose and sharp gravel in the road is taken at high or low speed, so far as wear on the tires is concerned, so long as the clutch is released during the interval and the car is permitted to "coast." When the wheels are relieved of the traction strain, nothing more is to be gained by running slowly than by running fast, so long as sufficient steerage way is maintained, and not sufficient speed attained to cause skidding.

TROUBLE THAT WAS MYSTIFYING

Its Source was Unsuspected Because it was Unusual—An Old Timer's Narrative of a Curious Experience.

"One of the hardest problems I ever encountered in the way of ignition trouble," said the motorist who is qualified to pass as an old timer, "was presented to me one afternoon when I was taking a trial spin in a car that had just been overhauled. It was a one cylinder runabout, and as I had owned and driven it for several months I was entirely familiar with every piece in its make-up, and I believed that nothing but a broken part or a burned out coil could give me more than a few few minutes of trouble.

"When I started for my trial ride, on the afternoon in question, I put in a new spark plug; it was one of the type where a wire runs through the mica core and extends out about one-half an inch, its end being bent over like a hook and ending close to a similar wire or sparking terminal that was fastened to the base or shell. Before inserting the plug I tested it and finding that it was all right, I did not attribute the difficulty I had in starting to anything connected with it. After cranking a good deal more than was generally required of me the engine started and I drove away.

"My first trouble came when I began the ascent of a steep hill. The explosions became very irregular with a consequent loss

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of power. The first thought was batteries, but knowing that they were all right, I looked over the rest of the ignition and found nothing amiss. After a lot of delay I loosened the secondary wire from the plug took the latter out and found that to be all right as I had supposed it would be. Again I cranked the engine and after a little time succeeded in getting it going, but as soon as I tried to move the car the same irregularity of firing was noticeable.

"Well what to do I didn't know. My gasolene was good. My carburetter was working, batteries O. K. I had compression and the spark plug responded to all tests and the machine would not begin to do its work. It was merely a case of 'think it over' and as I am not a person who aimlessly tinkers in the hope of accidentally finding out where the trouble lies, I did not make a half dozen changes in the different parts which were working all right but confined myself to seeking something that was apparently susceptible of change or readjustment. As I could find nothing that was out of order I determined it must be in the spark plug and though that was apparently all right, I replaced it with another, tried results and found I had located and remedied the difficulty.

"Naturally my curiosity was excited and a careful examination of the plug showed that the whole center core was slightly loose and when I tightened the nut holding the secondary wire I turned the core so that the sparking points became too far apart for the spark to jump when the load was on. In taking out the plug I first loosened the nut and in doing this turned the core back to its normal position so that the trouble was not apparent at a casual inspection.

"It was a very unusual thing to have occur and if it ever happens again it will not bother me for any great length of time, but I venture to say that no matter how experienced in gas engine matters a man may be the same perplexity encountered for the first time will make as much trouble for him as it made for me. When a brand new spark plug tests out all right there's mighty little reason for ascribing to it a trouble which might come from some other source."

New Theory of Carbon Deposit.

A foreign investigator has advanced the theory that the use of lubricating oils containing quantities of vegetable or animal oil is responsible for the presence of copper in the cylinder incrustation usually known as "carbon deposit," and in which traces of that metal have recently been discovered abroad. His idea is that the "fatty" acids of the spurious constituent in the oil attacks the brasses of the various bearings forming a small amount of "metallic soap" which finds its way past the piston and into the combustion chamber. The high heat existing during the cycle is then sufficient to decompose it and leave the metal in the crust which the heavier constituents of the oil leave behind.

MAKING PATHS FOR FIRE FIGHTERS

Automobile Performs Pioneer Duty for Detroit Department—Clears the Roadway in Snow Bound Streets.

While the automobile has been put to many uses that are foreign to its general occupation of transporting persons or merchandise it remained for the Cadillac Motor Car Co. to prove its utility as a path maker for the fire department. A few days ago, after a heavy fall of snow in the city of Detroit, Mich., it was feared that the fire department would experience difficulty and delay in responding to an alarm if one should be sounded. At the solicitation of one of the fire companies, whose location is near the Cadillac factory, a 25 horsepower Cadillac was pressed into service and a snow scraper fastened behind it. Although the snow was a foot deep, with occasional drifts much deeper, the car not only was able to break a way for itself, but succeeded in pulling the plow and in clearing a path over about 15 miles of streets, and in not much more than an hour.



CADILLAC BREAKING ROAD FOR DETROIT FIRE FIGHTERS

Indianapolis Show Awaits Freemasons.

Indianapolis dealers have decided to postpone their proposed "open house show week" to March 23-28, instead of one week earlier, as first arranged. Two thousand Masons are expected in Indianapolis during the former week and the dealers are confident that many of the lodge members will ride home in new automobiles. It has been definitely decided to hold a hill climb and a parade during the week, the events for the former being as follows: Cars listed at $1,000 or under; cars listed from $1,000 to $1,800; cars listed from $1,800 to $2,750; cars listed from $2,750 to $3,500, and cars listed over $3,500. A silver loving cup will be the first and only prize in each event.

Portland's Show Simple but Pleasing.

Portland's annual automobile and motorboat show is holding the boards in the Maine seaport this week. The show opened on Monday night in the Auditorium and will continue throughout the week. The decorations are simple but pleasing. Red and white is the general color scheme, the floor being carpeted in green, while thousands of flags hang from the girders. Among the exhibitors are Herbert A. Harmon, Franklin and White; F. A. Nickerson Co., Oldsmobile; Stoughton Folkins, Maxwell; Portland Co., Knox; Spear Auto Co., Ford; L. C. Gilson, Reo, Premier and Stanley; Maine Motor Carriage Co., Stevens-Duryea, Peerless and Pope Hartford; and Swan Stuart, Cadillac. J. H. Dowling, the Thomas agent is not exhibiting at the show, but is holding "open house" at his garage on Forest avenue.

Tire Makers Offer Cash "Accelerators."

If the car driven by the winner of the Briarcliff trophy stock car race on April 24 is equipped with Diamond tires, it means an extra $500 for him, the Diamond Rubber Co. having hung up that purse as an added incentive. For second place they will give $350, and for third, $150. The Diamond corps of tire experts will be on the course, of course, to "lend a hand" when it is necessary.

Similarly the Continental Caoutchouc Co. has offered $200 for victory in the 300 mile race on Ormond Beach next week, and $100 for first place in the 100 miles event.

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A. A. A. FRAMES AN AMATEUR RULE

But It Proves of a Very Original Character —Two Cities Apply for Vanderbilt Cup Race.

Three days of last week were spent by the sub-committee of the American Automobile Association's racing board in the work of revising the racing rules, which suggests that many changes were made. The nature and extent of the amendments are, however, official secrets save in one respect: It is authoritatively admitted that the committee heeded the demand for an amateur definition, the rule as drafted for submission to the full board taking the following form:

"A man who has never driven or raced a motor car for pay, either in cash or any other valuable consideration; or competed for a cash prize; who does not make his livelihood or any part of it, as a result of racing or driving, either as a demonstator, tester, or chauffeur; who has not otherwise received financial reward for engaging in competition; who has never been declared a professional by any sport-governing body or who, having been so declared, has been reinstated either by such body or by the racing board of the A. A. A."

All of the members of the sub-committee. Messrs. J. Dumont Thompson, chairman; Alfred Reeves, A. L. Riker and S. A. Miles, were present at the meeting of the board, which was held in the Association's New York offices on Monday last, 24th inst., when they submitted the result of their labors. The others in attendance were William K. Vanderbilt, Jr., New York; E. R. Thomas, Buffalo, N. Y.; Rossiter Worthington, New York; A. R. Pardington, New York; A. G. Batchelder, New York, and Frederick H. Elliott, secretary.

The revised rules were read and discussed and ordered printed. They now will be submitted to the absent members for suggestion. They will come up for final adoption at the next meeting of the board.

The Vanderbilt cup race also had a look up at Monday's meeting, and prospects were held out that it may be run this fall. Chairman Thompson reported that the Automobile Club of St. Louis and the Savannah Automobile Club, both were desirous of submitting propositions for the holding of the Vanderbilt cup race next fall, and Vanderbilt himself requested that the proposals from these clubs be investigated and placed before the board at an early date.

Rough Hewing in Ohio Legislation.

After considerable entangling argument relative to "schofurs," "chaffers," and "shufoors," the Ohio senate has decided that it does not know exactly what is contained in the automobile bill introduced by Senator Ward, and has sent it back to the committee for revision and reprinting. A fight was made for home rule for cities, but not with success. It was agreed that cities might determine what portions were closely built up, thus coming upder the eight mile limit, and the remainder was left at the fifteen mile limit. One senator wanted the annual license fee increased from $2 to $10, but a compromise was reached on $5 per year. A provision put in by the committee preventing chauffeurs from getting a commission on supplies was stricken out as not germane to the bill. Senator West discovered indications of carelessness in drawing the measure which was copied from the New York law, and was full of references to "boroughs" and other features of the New York law not applicable to Ohio. The committee is now at work on the corrections.

May be Maryland Motordrome.

Mimetic Maryland has contracted "autodromstructitis." This is a malady that causes persons to form companies to build mammoth velodromes for automobile racing only, none of which are constructed, however. The fever is is contagious. New Jersey has been the worst sufferer, but New York, Massachusetts, Pennsylvania, Ohio and even diminutive Delaware, have had attacks of it. Now comes Maryland. Senator Gorman has asked the legislature of that State to grant power to the Motorcar Racing Association to construct a motordrome in the State and operate it. Senator James Young, Thomas A. Robinson, E. A. Cassiday are named as backing the project.

A. A. A. Ready to Test Anti-Chain Rule.

If any member of the American Automobile Association is particularly anxious to test the validity of the recently re-enated regulation of the New York Park Board prohibiting automobiles wearing tire chains, it will cost him nothing to do so. All he need do is to notify the office of the Association, 437 Fifth avenue, or Charles Thaddeus Terry, counsel for the American Automobile Association, 100 Broadway, New York, of his arrest, when the association will step in and defend him. In fact the A. A. A. will defend, without expense to those arrested, any number of cases as may be adequate to test the validity of the enactment.

Easter Sunday for Jalisco Cup Race.

According to advices from Guadalajara, Mexico, the annual Jalisco cup race will take place on Easter Sunday, April 19th. It is stated that one of the contestants will be Joseph Tracy, who will drive a 90 horsepower Locomobile. The Jalisco cup race is Mexico's biggest sporting event, the prize being a costly silver cup donated by Alfonso Fernandez Comellera. The Mexican government allows the promoting club to close the roads on the day of the event, besides furnishing abundant troops to police the course. All the business houses of Mexico City declare a holiday during the races.

MOTORISTS CANNOT GET DAMAGES

Roads Need not be Made Safe for Them, Says Massachusetts Court—Automobiles not Carriages.

According to the Supreme Judicial Court of the Commonwealth of Massachusetts an automobile is not a carriage, and despite the fact that they pay special and extra fees ostensibly for highway improvement, it is not part of the authorities' duties to keep the roads safe for automobilists' travel. In other words, the provisions of law which make cities and towns liable for injuries sustained by carriages through defects in the roads do not apply to automobiles.

This wealth of judicial wisdom was evolved in consideration of an appeal made by the town of Ayer from an award made by a local court. William C. Doherty had sued the town for damages on account of damage to his automobile resulting from the condition of the road. Judgment for $100 was given in Doherty's favor, but the award was set aside by the Supreme Court in a decision handed down on the 25th inst., in which Chief Justice Knowlton says:

"It hardly can be contended that locomotive cars of many tons' weight, propelled by gasolene or steam or electric engines, with complicated machinery capable of developing 50 to 75 horsepower and sometimes even more, are vehicles of a general kind as the carriages known to the legislators of Massachusetts in 1786."

This part of the decision was in reference to the highway statute originally enacted in that year requiring cities and towns to keep their roads safe and convenient for "travelers with their horses, teams and carriages."

The court says that to oblige cities and towns to put all highways through remote and seldom used sections into a condition to stand the strain of automobiles would be a burden heavier than they could bear; also, no reasonable expenditure of towns would be enough to make all roads safe and convenient for the use of heavy automobiles at all times of the year.

The court decides that the automobile is not a carriage with the meaning of the statute, and that any one can lawfully ride in them, but that "if the road is reasonably safe for travel generally, towns are not liable for a failure to make special provision required only for the safety and convenience of persons using automobiles or bicycles."

Lytle Changes His "Stable."

Herbert H. Lytle, so long associated with the Pope-Toledo racing "stable," has been engaged to drive an Apperson Jackrabbit in the Savannah stock car races next month. George H. Robertson will drive the other Apperson that is entered.

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SCIENCE OF THE ROLLER BEARING

Alden Explains Reason for the Taper Roll with Two Ribs—Its Evolution in the Timken System.

Since the development of the anti-friction type of bearing has become, as it were, an art within an art, it follows that comparatively few engineers are really well informed on all phases of the subject, while the average layman has absolutely no comprehension of the theory involved in the construction of the various types answering to this description, even though the mechanical construction involved may be thoroughly familiar to him. The following paper, which was read by H. W. Alden, consulting engineer of the Timken Roller Bearing Axle Co., at the January meeting of the Society of Automobile Engineers, is therefore particularly informing, as showing in a general way the application of the self-aligning taper roller bearing to the uses of the automobile mechanism.

"There would seem no chance for argument that in the abstract a roll should be capable of carrying a greater load than a ball of the same external physical dimensions, granting that material and workmanship are identical and eliminating the question of alignment of the roll," says Mr. Allen. "Comparisons made in this article will assume a ball bearing using a curved surface for the cone with a radius of .7 the ball diameter. No distinction will be made between the annular or radial, and the so-called bicycle type of ball bearing. In the roller bearing the diameter will be assumed, same as that of the ball with length equal to diameter.

If we consider that, when a ball or roller is loaded, there is an infinitesimal flattening out at the point of contact, then the load-carrying capacity, other things being equal, will be approximately proportional to the area presented to carry the load. We find that assuming the roll or ball and the cone to suffer a deformation of approximately one thousandth of the radius of the ball or roll, we get resulting areas in the ratio of approximately 7½ to 1 for the roll and ball respectively. Now it is this remarkable showing that has tempted so many to experiment with the roller bearing. A search through the patent files of this country alone shows an almost unlimited number of attempts, very few, however, of which have ever come to light, and almost all of which have disappeared from view. Perhaps the majority of experimenters have tried the taper roll, which statement brings us up to our second point, namely, end thrust.

"The cases where a bearing is submitted to side load alone are possibly in the majority, but there are many cases where the bearing has both side and end load to withstand. This is particularly true in the case of the automobile, where perhaps the majority of the bearings have to stand thrusts, some of which, as in the case of wheels and bevel gears, are exceedingly severe. I think we sometimes fail to recognize the severity of this front wheel end thrust. When turning a corner of 25 feet radius at 15 m.p.h., which is by no means rarely done, the end thrust on that front wheel bearing which gets the maximum thrust is just about the same as its legitimate side load. The bearing then ought, by virtue of its design, to be able to take about the same load one way as the other. Now this is a strong point of the taper roller bearing. It can be shown that such a bearing, having an included angle of approximately 23 degrees for the cup, can carry the same end thrust load as side load for a given surface pressure normal to the roll surface. I find that there is a pretty general impression that, in the case of a taper roller bearing, having an abutting shoulder, all of the end thrust load is taken on this small shoulder. This is not the case, as can be shown by a simple illustration. Suppose a complete bearing to be subject to end thrust, but not to be in motion. Now, while the load is still applied, remove the rib or shoulder on the cone, by screwing it back out of the way, for instance, and it will be found that nothing happens. No matter what the load, the rolls refuse to change position. Now rotate the bearing slightly and it will be found that, so long as the rolls remain in correct alignment, there is no axial change in their location. When they get out of alignment, however, they begin to creep back up the cone.

"This brings us to the third point in question, that of alignment. And this, be it said, is the feature of greatest importance in all roller bearings. It is the rock on which many a roller bearing has gone down. In the case of parallel roller bearings, there is a peculiar but persistent tendency of the rollers to work endwise; not great, but still present. Now most parallel roller bearings have some member either on the cone or cup, or both, to limit this action, and sooner or later the roll brings up against this abutment. So also in every taper roller bearing, the rolls bring up with a certain slight pressure against this same limiting element. It is at this crucial point that roller bearing designs and construction diverge. From this point all can be divided into two classes, those receiving this limiting effect at one end of the roll and those receiving it at both ends. Perhaps I should not have referred to the latter class in the plural as there is only one where this effect is obtained, i. e., receiving this limiting action at both ends of the roll. If the roll bears ever so lightly against an abutting shoulder at one end only, the tendency is to exert a slight retarding effect at this point which disturbs the alignment. With the correct alignment gone, there is then not pure rolling action, but a rubbing action, and furthermore the area of contact at once is greatly reduced. In other words, sliding friction has been substituted for rolling friction, and the contact area to carry the load has been reduced. The life of the bearing is therefore greatly reduced. When, however, this slight retarding effect is applied equally to each end of the roll, it is changed from a disturbing action to an actual guiding action.

"When the Timken company first began work on taper rolls, they, like all others before then and some since, had but one rib on the cone, and their earlier experiments were all failures as could have been predicted had the proverbial foresight been as good as 'hindsight.' Upon the introduction, however, of the two ribs, the alignment difficulty disappeared, and some seven years' experience covering many forms of application prove the fundamental value of these two ribs. Another feature of the taper roller bearing which appealed at the outset was the ability to take up wear with this form of bearing. We like to think that wear does not occur with pure rolling contact, but the bulk of the experience of users of bearings shows that in most cases wear does occur. If it cannot be taken up, it continues at an increasingly rapid rate, whereas, if it can be taken up, the bearing is ready to start out fresh again. Doubtless for some service, size and material can be chosen to eliminate wear from practical consideration. These cases are limited, however, and even in such cases a larger amount of material must be used than would be required if some wear could be tolerated. On the whole, then, from a practical standpoint, the taper roller bearing using two ribs has good reason for its existence, because of its area of contact giving large side load capacity; its large inherent and thrust capacity; its insurance of correct alignment, and its adjustability for wear."

Sparks Tell Difference in Steel.

To the average automobile mechanic, all steel is pretty much alike until he attempts to work it either by hand or in the lathe, when he immediately discovers that there is a vast amount of difference between steel and steel. In this connection it is well to remember that the so-called "high speed steel" may be distinguished by its tendency to develop red sparks when pressed against an emery wheel, while the ordinary tool steel gives a shower of white sparks under similar circumstances, as does machine steel.

Short Circuit for the Magneto.

Wherever the magneto is employed in connection with a double ignition system, it is important that the controling switch shall include means of short circuiting the magneto when it is not in use. If this provision is not properly carried out there is danger of breaking down the insulation of the armature windings.

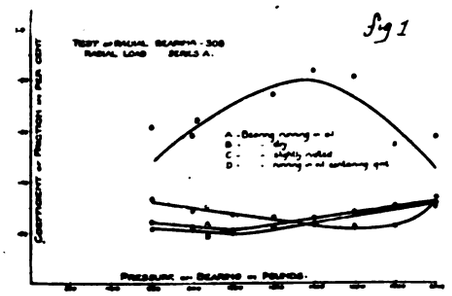
"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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CARE OF THE BALL BEARING

How Lack of Lubrication Affects Its Running—Effects of Rust and Grit as Shown by Tests.

There is a general impression extant among automobile users, that, whatever may be the effect of neglect and misuse upon a bearing of the plain cylindrical type, the average ball bearing may be run without oil, with its parts badly rusted, or even clogged with grit, without seriously affecting its efficiency. This impression is fostered by the fact that even under the most adverse conditions, the ball or roller bearing cannot "set" as may happen with the plain bearing when subjected to abuse. An accurate, and enlightening demonstration of the mistake of supposing that the ball bearing requires no attention, and will run as well under poor as under good conditions,

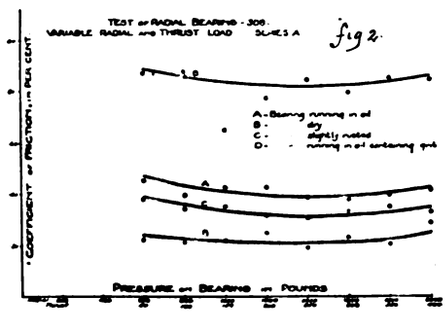


was supplied by a paper read before the Society of Automobile Engineers recently by Henry Hess.

Taking a bearing of the two-point contact, annular type ordinarily used in wheel hub bearings, several tests were performed with the idea of determining the effects of various running conditions upon it, both normal and abnormal. "In a hub the load will be purely radial, i. e., at right angles to the axle when the car is going straight ahead," says Mr. Hess. "When rounding a curve, or weaving from side to side an end thrust, parallel to the axle, will be imposed in addition. Properly mounted and taken care of, the bearing will be amply lubricated and kept free of rust and grit." Because not all bearings are "properly mounted and taken care of," as well as "amply lubricated and kept free of rust and grit," the tests were made to include such improper conditions as might be assumed to result from improper use.

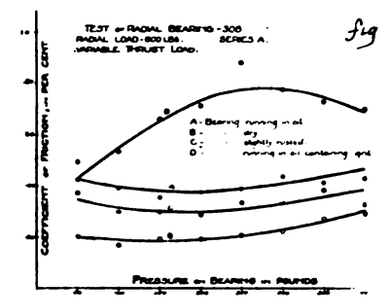
Briefly, four sets of tests were carried out embodying radial loads, combined radial and thrust loads, and thrust loads only. For each of these conditions, four sets of trials were made corresponding to conditions of (A) copious lubrication; (B) practically no lubrication; (C) with rust, and (D) with grit; these tests were repeated under each load condition. The loads ranged from a low load as compared with the capacity of the bearing to a very decided overload. The radial load started at 600 pounds and was raised by 200 pound increments to 2,000 pounds. The thrust loads ranged from 50 pounds to 400 pounds by 50 pound increments. The speed was taken at 300 r.p.m., this corresponding approximately to a car speed of 30 miles per hour.

Copious lubrication was provided by allowing the bearing to dip into a relatively



large reservoir of oil. For dry running the bearing was rinsed out in gasolene and then dried out in an air blast; this left a very slight oil film, not perceptible to the touch, but nevertheless present. After this test the bearing was rusted in water until a light coat was deposited on all surfaces. Owing to the high finish of the balls and races, the rust film on these was not thick; on the separators which are not polished, the rust was much heavier and interfered decidedly with their elastic action. Grit was provided by throwing sharp building sand between the races.

The tests were carried out by means of a special friction measuring machine capable of measuring the force of the frictional resistance due to radial loads up to 15,000 pounds, of thrust loads up to 10,500 pounds, and of combined radial and thrust loads in any ratio within these limits, and at speeds ranging from 200 to 2,000 r. p. m. The accompanying curves were plotted from the

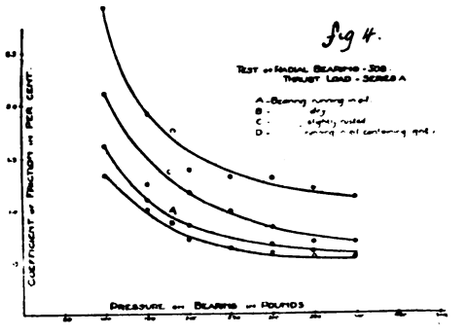


results of the various tests. Of that shown in Fig. 1, the author says:

"The friction (always referred to the bore of the bearing in order to permit of ready comparison with the friction that occurs in plain journals at the bore or shaft surfaces) ranges from 0.21 to 0.25 under copious lubrication (A). The dry running curve (B) is parallel, and, curiously, lies about 10 per cent. lower. The difference represents not the difference in bearing friction, but that of the relative resistance of the copious oil supply and the slight film left after the oil was washed out in gasolene. It would not do to conclude that this justifies the cutting out of oil, as is not infrequently advised; aside from other considerations, oil, and plenty of it, is necessary as a rust preventative.

"Curve C, with the bearing rusted, shows at first about 50 per cent. increase in friction, and then, very surprisingly, a gradual drop, curving down to the best values of A and B; but toward the close rising again sharply. An examination of the races involved shows that the initial higher friction was due to the rust, that, as this was worn off, the friction dropped and that the roughening due to the rust having destroyed the high polish and the truth of the ball and race surfaces was attended by an increasing breakdown of these surfaces, as indicated by the final fast rise of the friction. Prolonged running would undoubtedly have confirmed the road experience of the very serious influence of rust on bearing life and endurance.

"As was to be expected, the insertion of



grit raised the friction very decidedly. The readings varied widely, so that the average curve, D, will be seen to lie quite far from some of the points. As the run was started with the lower loads, and as it took some time to bring about an even distribution of the crudely inserted grit, the friction rose as the grit involved more of the surfaces; the drop after that is accounted for by the gradual working out of the grit and to the grits being worked down and partially destroyed by the wearing action of the balls. In an automobile hub the grit would be more serious since it could not readily escape. The friction due to grit and rust tends to draw the end plates and separators under the balls, and as these two destructive agents wear down the parts the separators may be, and occasionally are, drawn under the balls. That means a destruction of the separators, while the violent wedging also occasionally causes the outer race to be split.

"Fig. 2 gives the friction of the bearing carrying simultaneous radial and thrust loads, increasing simultaneously. A comparison of values under the condition of good lubrication, A, between Figs. 2 and 3, shows that a thrust load of ¼ of the simultaneous radial load about doubles the total frictional resistance, and that, as there is no pronounced upward trend within the load limits advocated, such combined loading is good practice. The curves of Fig. 3

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for a constant radial load of 800 pounds, and a variable thrust load of from 50 to 400 pounds, confirm the deductions drawn from Fig. 2. The advisability of submitting this two-point type of radial bearing to thrust loads has been frequently questioned, and occasionally even the admissibility of doing that has been denied.

"Fig. 4, gives a series of curves showing the friction in the conditions, A, B, C, and D. It will be seen that in every case the friction falls with an increasing load. It is generally reasoned that under thrust the balls must wedge between the curve races. Were that true, then the friction should not only be high, but even though not equally high under all loads, certainly not decreasing under increasing loads. The curves bear out my reasoning in explanation. We know, of course, that under load there will be a deformation of the shape of the balls and races, and that the theoretical point contact is actually a surface contact of small area. I assume that this surface has an average inclination which gives a blunter wedge than the geometrical angle of the theoretical point contact. . . . . As the load increases the deformation must increase; an increasing bluntness of the wedge angle with increasing load should therefore be accompanied by a decreasing frictional coefficient. This reasoning is confirmed by the trend of the curves of Fig. 4. Also, it has been observed that the thrust-carrying capacity of the heavy type of radial bearing is relatively less than that of the medium and light types. Now the heavy type has much larger balls and these will consequently deform less under heavy loads; that means a smaller change from the theoretical wedge angle, and, therefore, a relatively greater friction; so that this observed fact may be taken in further confirmation of my reasoning."

Among his conclusions, he presents these important points: "Simultaneous radial and thrust loading is permissible and does not result in a material increase of friction as compared with radial loading only.

"The bearing should be copiously lubricated; easiest running will be had with the least viscous lubricant; that, however, must not be so light as to escape readily, but must be retained by the mechanical arrangement of the hub.

"Rust must be rigidly excluded, as it will result in breakdown of the bearing surfaces and of the carrying capacity.

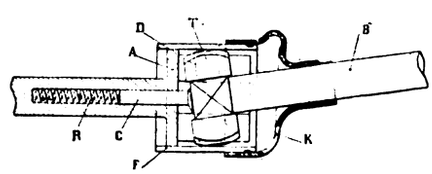
"Grit must be rigidly excluded, as it will result in a wearing away by grinding of the balls and races.

"As between rust and grit, the former is the more dangerous, since it involves the destruction of carrying capacity, while grit merely brings about a faster wear than is desirable. Rust and grit are nearly always found associated, as the conditions admitting the one generally admit the other. Their combined influence is decidedly bad. Fortunately, both can be kept out by means which are available, simple and cheap."

CUSHIONING THE END THRUST

Simple Method Adopted in Double Jointed Propeller Shaft—Maintains Position of "Floating" Member.

In the construction of the universal jointed propellor shaft of the live axle car, it is, of course, necessary to provide for flexure in the direction of the vehicle's length as well as in the vertical and lateral senses, since it is impossible to maintain an absolutely fixed distance between the axle and the gear box or clutch at all times. On this account it is customary to provide a slip joint of some sort either directly in the cardan joint, or in the shaft itself. In some cases one of the couplings of the cardan joint is made to slide loosely over one end of the shaft, which is squared. In others, the coupling itself is so constructed



that a certain amount of end play is permitted.

In certain instances where a double jointed shaft is employed, two such slip joints are provided, one at either end. In such a case, there is a tendency for the "floating" member of the group to work to one end or the other, thus locating the sliding movement entirely at the opposite end of the shaft. To guard against this tendency an elastic medium, such as a spring or springs, is frequently introduced to preserve the distance of the slidable member from its limits of travel under ordinary circumstances, and maintain the full elasticity of the system.

The arrangement here illustrated is designed to accomplish this, and has been adopted for the 1908 model of a well known foreign car. Because of its simplicity, it well illustrates the purpose it is intended to fulfill, as well as showing the drawback obtaining where no such provision is made. The joint consists of the flanged driving shaft, A, which is slotted to receive the bearings, D, for the trunion, T, which is a part of the driven shaft, B, in which the flexible provision is made. The shaft, A, is drilled out for a short distance, and carries the plunger, C, which rests against the end of the shaft, B, and is backed by the helical spring, R. The joint itself is completely housed by the shell, F, and the flexible protector or boot, K.

From the illustration, it is plain to see that the shaft, B, may approach or recede from the end of the shaft, A, within certain limits, yet without affecting the action of the joint. The same applies to the second joint at the opposite end of the shaft, B, which is similarly mounted. The function of the spring, R, is to keep the shaft equally placed between the two joints, which it does by working against a second and similar spring mounted in the other joint. The effect is to cushion the longitudinal movement of the shaft without in the least affecting its suitability in the main purpose of supplying a supple connection between the motor and the driving axle.

To Make a Flexible Plug Connection.

One of the frequent annoyances that the motorist is subject to is the breaking off of the secondary terminal at the spark plug end. While the main cause of this is the vibration of the wire, a contributing cause may be found in the fact that the terminal is soldered to the wire making a stiff and solid connection at a point where flexibility is desirable.

A simple and thoroughly effective way of obtaining a good contact, and yet securing one that is absolutely flexible, is by coiling a fine brass spring wire, say about an 18 or 20 gauge, around a lead pencil, making a spring 3 or 4 inches long, the end of the coil spring thus obtained may be soldered to the secondary wire and the other end of it either soldered to a terminal or shaped to meet the requirements of the spark plug. The result of this is to obtain a flexible end that will permit of any amount of vibration and will not offer sufficient resistance to cause the wire to break.

To Prevent Trucks from Skidding.

At first thought one is not likely to believe that automobile trucks for heavy delivery, fitted with huge twin tires are apt to cause much trouble from skidding, but when it is realized that, though these ponderous vehicles are designed for slow speed only, they obtain a high rate of speed when going down a hill, the question of some anti-skid devise is of prime importance.

Possibly the simplest and yet most effective preventative that can be obtained is an ordinary chain running around the wheel between the two tires. If it is sufficiently loose so that none of the driving strain comes on it there would be comparatively little wear, but when the car begins to skid because of the sudden application of the brakes or for any other reason, the side movement would bring the chains into play and effectually stop it.

Tire Trick on Second Hand Cars.

Purchasers of second-hand cars besides making a thorough examination of the mechanical portion of the prospective investment, would do well to investigate the condition of the tires. It is an easy matter for the dishonest dealer to insert old and practically useless inner tubes in casings, which to all appearances are in good condition. Furthermore, re-treaded tire casings are not always what they purport, or appear to be.

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RESTRICTIVE LAWS FOR GERMANY

Demand Made in Reichstag "for the Protection of the Public"—Government Promises Immediate Action.

Automobile legislation seems to be worrying the members of the German Reichstag as much as it does legislators in America, according to cable dispatches from abroad. Last week the question of automobile regulation in Germany came up in the Reichstag and provoked considerable discussion, the assurance being given by the government that it would put forth a stringent measure "for the protection of the public."

Prince zu Schonaich-Corolath began the discussion by calling upon Chancellor von Bulow to protect pedestrians by the prohibition of road racing, confining these contests to inclosed tracks. He also demanded the suppression by legislative measures of noxious odors arising from motor cars and examinations for chauffeurs, who should not receive licenses until they had driven at least 6,250 miles under the supervision of qualified instructors.

Herr Nieberding, the Secretary of State, replied, amid applause from all sections of the house, that a bill was ready for introduction in the Reichstag making the owners of automobiles fully responsible before the civil courts for accidents, while negligent drivers would be subjected, according to its provisions, to severe penalties, including fines and imprisonment.

Chauffeurs, henceforth, would be compelled to undergo examination relative to their technical knowledge of motor cars and their trustworthiness and skill as drivers. The questions of road racing and noxious odors will be left to the decision of a committee.

The government's action, it is stated, has been induced by recent official statistics of automobile accidents in Germany, which claim to show that from October, 1906, until October, 1907, there were 4,931 motor car accidents, involving 145 deaths and injuries to 2,419 persons, half of these occurring in Berlin. In 93 per cent. of the cases passenger cars were responsible. Among the victims 8 per cent. were the occupants of the cars and 76 per cent. were pedestrians.

New Yorkers to Circle the Earth.

Around the world automobile trips seem to be increasing in popularity. Burton S. Castles, a member of the New York Cotton Exchange; Frank Hubbard, partner of Charles G. Gates, and Clarence Hertie, have announced that they intend to start out next month for a tour around the world, taking in Japan, China and India. The three New York financiers will not attempt to break records, however, as they expect to be gone more than a year. Their avowed object is to have a good time, and to explore interesting and odd corners of the globe. They will use an American made car, and will take with them an American chauffeur and mechanic.

Would Confiscate Too Speedy Cars.

Like many of his colleagues in Massachusetts, Judge Lloyd B. White has decided views upon the question of automobile legislation. Judge White thinks a law should be passed prohibiting the manufacture and sale of automobiles capable of more than twenty miles an hour, and that the State should confiscate all cars that can go faster than this.

Judge White made known his ideas last week in refusing to postpone sentence on Dr. Charles W. Carey, of Quincy, found guilty of driving his car faster than the law allows in Hingham last September. His judgeship sat in Superior Court at Plymouth and delivered his opinion of automobile speeding when he said:

"Automobiles and automobilists will never be regulated until a law is passed absolutely prohibiting the manufacture and sale of machines capable of running at a rate of speed greater than 20 miles an hour. A way to effect this is to have the State confiscate all automobiles found within the commonwealth which have been proven to have been run at a greater speed than this."

After relieving his mind of this peroration his judgeship White fined Dr. Carey $25. The latter's attorney took exception to the ruling and took an appeal of the case to the Supreme Court.

Minneapolis Adopts Its New Ordinance.

As was expected, the Minneapolis city council passed the automobile ordinance which will require that hereafter automobilists and motorcyclists renew their city licenses each year, the charge for a renewal being 50 cents, instead of $2, as it was previously the case. Licensees will be given the privilege of taking out the same number each year, upon payment of 50 cents after the first year. Motorists will have to carry two tags, one of the State and one of the city, the latter containing the name "Minneapolis" in addition to the number of the tag and the year of issuance.

Jail for a Pittsburg Scorcher.

"I'll fine you six cents——" began Judge Brown, in a Pittsburg court, and Charles N. Smith, a chauffeur who violated the speed ordinance, smiled and picked up his hat to go.

"And," continued the judge, "sentence you to thirty days in the county jail!"

Smith forgot to smile as he was being led away. It was one of the first jail sentences for scorching meted out in Pittsburg.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

TO ROUT RIOTERS OR RAIDERS

Quaker City Motor Club Developing Military Spirit—Proposed Corps to Serve City, State or Nation.

Although Philadelphia has long been considered slow, the Quaker City Motor Club of that city is at least several minutes ahead of the calendar. It is ready to tackle either hoodlums, strikers, or Turks, in fact, it is ready for r-e-a-l w-a-r, if need be. Its advancement and ambitious valor is taking the form of a movement to organize a volunteer corps to render service to either city, State or nation in the suppression of lawlessness, or if need be, in repulsing foreign invasion in time of war. Thus it may come about that in the City of Brotherly Love, in a State founded by a member of that religious sect which opposes war, Uncle Sam's belligerent ability will be increased by the creation of an automobile auxiliary.

H. C. Harbach, the club's secretary, has sent to President Roosevelt a communication in which the plan is outlined briefly and which urges the president to accept the services of such a body. Accompanying the letter, a copy of which was sent simultaneously to Governor Stuart of Pennsylvania, and to Mayor Reyburn, of Philadelphia, was a preamble and set of resolutions adopted at a meeting of the club's board of governor's held on Thursday night last.

The preamble and resolutions which accompanied the letters, read as follows:

"The Quaker City Motor Club of Philadelphia, First Volunteer Motor Corps.

"Preamble: Whereas, The American automobile has thoroughly demonstrated its utility and reliability as a vehicle of rapid transit; and,

"Whereas, The march of progress demands both speed and endurance for all common carriers; and,

"Whereas, The automobile is the practical forerunner of advancing civilization;

"Now we, The Quaker City Motor Club, do hereby propose to enlist and enroll from among our members in good standing a sufficient number of capable and able-bodied men who shall agree to act as a volunteer motor corps.

"This volunteer motor corps is to offer its services and machines, through the Quaker City Motor Club, free to the City of Philadelphia, the State of Pennsylvaniaa nd the United States Government as an auxiliary force, in all cases of urgent need or dire necessity for the suppression of lawlessness and insurrection, or in the graver duty of repulsing foreign invasion in time of war. And,

"Whereas, The Quaker City Motor Club is only actuated by true patriotism and love of country, we most humbly pray your best consideration and prompt acceptance of this sincere proposal."

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AIRING RHODE ISLAND MEASURES

Judiciary Committee of Legislature Gets Points for Automobile Laws—Things Said at a Hearing.

There was interesting variety in the protracted hearing given at Providence, R. I., on the 18th inst., by the House judiciary committee, which at present has charge of three new automobile measures, introduced in the State legislature. These measures consist of one introduced by Olney Arnold, providing severe penalties and specifying a definite speed limit; one introduced on behalf of the Rhode Island Automobile Club; and a third, introduced by Mr. Phillips of Coventry, which proposes a radical change in the existing law by placing the control of automobiles in the hands of the State board of public roads, instead of the Secretary of State.

The automobile club's bill was advocated by Col. Frank W. Tillinghast, of the club's special legal committee, who explained that the measure aimed to amend in some particulars the existing law which he declared to be in the main a satisfactory one. He condemned the proposition, embodied in one of the bills, which asks for an annual tax on automobiles, saying that such a thing should be labeled a means for raising money and not a means of regulating automobiles. In regard to licenses for operators, the speaker declared that annual licenses were not just or desirable.

In criticism of the bill advocated by Col. Tillinghast, it was shown by Mr. Hogan that, under provisions regarding the powers of the Secretary of State in revoking licenses, a man convicted of violating the law would have two court trials, a thing which none other could get. Col. Tillinghast admitted that this was true, and that the Secretary of State would not have power to revoke a driver's license until final conviction. But he expressed opposition to vesting the power of revocation in the courts of the State. He declared that it should be in a central body. The Secretary of State, in the speaker's opinion, was the best official to consider this problem.

"You are not dealing with a lot of lawbreakers; you are only providing against a few reckless persons," said Col. Tillinghast.

After reading the speed regulations provided for in the club's law the speaker continued:

"If every person drove his machine reasonably and properly there would be no complaints from any one about reckless operation. Upon this point there has been considerable discussion. We provide that 15 miles per hour in any city or compact section of any town or village is the speed limit. But we further limit this provision by saying that it shall be reasonable and proper at all times. Outside of these sections we do not fix any mile limit, but I think that 'reasonable and proper' fits the case exactly, and is what is desired. Other States are repealing their mileage limits because they find them unsafe."

Following Mr. Franklin, of Newport, who spoke in favor of having the owner of a car held equally responsible with the man who runs it, Col. Tillinghast again addressed the committee in explanation of the penalties provided for in his bill. This section places a fine of from $10 to $500 and imprisonment from 40 days to one year, in the discretion of the court. He showed that if a more severe penalty is provided for a second offense than for first, a man might get unjust treatment in court. The speaker explained this provision by saying that the second offense might be merely a technical offense and not worthy of a severe penalty.

The stock argument of making automobilists pay for the added cost of road maintenance charged against their vehicles figured in the hearing as a matter of course, and was combatted by Fred E. Newell of Central Falls in a vigorous speech, during which he said:

"Now, Mr. Chairman and gentlemen of the committee, I hope you will give this bill due consideration, before recommending it, for it looks to me as if there was a movement on foot to make one of the greatest blessings that progress has ever conferred upon man so expensive that none but the wealthiest people can afford to own one. Now this bill states that a person owning an automobile must pay each year not only a license but a registry fee for every machine he owns. Now I own three, not that I want to; I'd like to sell two of them. I am obliged to pay three fees and one license fee, to say nothing of three or four kinds of insurance on them. Is this right; is it a square deal? A man can own a team of horses and all kinds of wagons from a tip-cart to a six-horse moving wagon, yet he pays nothing. He wears out the roads and millions of dollars have been spent on the roads and streets for the wear and tear of his wagons and the nuisances of his animals long before the automobiles were heard of, but I never heard of any special tax or license they had to pay."

Discussion of the speed limit brought out a number of varying suggestions and was marked by a touch of the ludicrous in the declaration of H. H. Whaley, of North Kingston, who said automobilists go so fast through his town that they can't stand the wind on their eyes. "They can't look at the scenery because they go so fast," he said. "Once I went out to see the number of a machine, but gracious! the whole thing went by so fast I couldn't even see the machine itself!" Whaley favored a speed limit of 15 miles.

Another of the amusing points of the hearing was the suggestion made by Lellan J. Tuck, judge of the Tenth District Court of Pawtucket, who declared against the use of horns, and said: "An autoist who is equipped with a big horn or a siren feels that because he blows that horn every one else should get out of the way. Therein lies the trouble. I would advocate that no automobile be allowed to carry any horn or signalling device. If this was done the auto driver would be obliged to go at a reasonable and proper rate of speed at times where such is needed. Because a man can blow his horn he thinks he has a clear right of way. Take away a horn and the driver will be absolutely obliged to go slowly, and that is what we desire."

New York and Massachusetts automobilists were rapped by F. O. Strobridge, special automobile constable of North Kingston, who voiced the opinion of the town council in declaring the limit of fifteen miles too high, and added, "Rhode Island autoists are mostly gentlemen; it is the people from Massachusetts and New York that we have to look out for.

Speaker Burchard, of the House, who was the last to address the committee, spoke in favor of a graded tax on automobiles, grading the tax by the power of the respective cars, and fixing a minimum rate for cars used solely for commercial purposes.

The Horse was on the German.

When Herman Waubitzrider, of the Spring Garden district, Philadelphia, discovered the hood of an automobile snugly covered with a heavy lap-robe, he threw up both hands in amazement, and after stopping and pondering in his astonishment he decided that the curiosity aroused in him must be satisfied.

He determined then and there to make an investigation and ascertain, if possible, just what kind of an animal was being kept warm beneath the blanket. Approaching the machine, with all due caution, he raised the blanket and was peering beneath its folds when the owner of the car happened along.

Herman was in trouble in a moment, for the owner-chauffeur was inclined to think the man was bent on some mischief. He questioned the Spring Garden avenue German, and burst into laughter when the latter attempted an explanation.

"Vat iss?" inquired Herman. "No horse, no head, nottings to get cold. See, dere is notting but big iron box. Vat iss?"

It was explained that the blanket was used to protect the water in the radiator from freezing, the explanator adding that it also was done to keep the joints from getting stiff. Herman took another look, and said:

"Dot's alride about dot, but I can'd see vy iss it dot automobiles must vear blankets ven dere is no horse."

Thinking the motorist was trying to have fun with him, Herman stalked away in high dudgeon. Herman's address is not given. It probably is located in a Quaker fancy, but the fact does not spoil the readability of the story.

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The Week's Patents.

874,401. Ball Bearing. Freidrich Greiner, Berlin, Germany, assignor to The Firm of Maschienbau-Anstalt Altenessen, A. G., Altenessen, Germany. Filed July 23, 1907. Serial No. 385,144.

1. A ball bearing comprising in combination an inner ring, an outer ring, large balls in the annular space between said rings, two flat rings having a plurality of slots arranged between said rings covering said balls in said annular space, a plurality of bridges having holes and small pins on their ends arranged between said balls and at right angles to said flat rings, said pins passing through said slots and connecting said flat rings together, and small balls in said holes between said large balls.

874,404. Variable Speed Power Transmitting Gear. Peter Hesselins and John Jaderlund, Chicago, Ill. Filed March 12, 1907. Serial No. 361,959.

1. In a variable speed power transmitting device, the combination with two rotative shafts arranged at an angle to each other, of a plurality of annular concentric gears mounted on one shaft, a plurality of gear wheels meshing therewith and loosely mounted on the other shaft, means for separately locking said gear wheels to their shaft, an intermediate shaft and two connected gears mounted thereon, one of said two connected gears meshing with a gear wheel on said gear wheel bearing shaft and the other meshing with one of said annular gears for the purpose set forth.

874,405. Automobile. Harry L. Ide, Springfield, Ill. Filed Aug. 15, 1906. Serial No. 330,746.

1. An automobile including its frame mounted upon wheels, a rocking cradle mounted upon the frame, and an operating engine mounted upon the cradle, said cradle having two bearings displaced longitudinally of the automobile and disposed substantially midway between the sides of the frame.

874,419. Clutch Mechanism. William R. McKeen, Jr., Omaha, Neb., assignor to Edward H. Harriman, Arden, N. Y. Filed Oct. 2, 1905. Serial No. 280,922.

1. In a device of the class described, in combination, a pair of clutch members provided with means adapted on said members being thrown into engagement one with another automatically to tend to draw the same together, said means comprising a plurality of teeth upon each member, the space between contiguous teeth upon a member increasing in a direction toward the roots thereof.

874,450. Gas Engine. Andrew J. Spicer, Franklin, Ind., assignor, by mesne assignments, of one-half to Elmer C. Russell, Indianapolis, Ind. Filed Oct. 22, 1906. Serial No. 340,011.

1. In a gas engine, the combination, with a combustion chamber having a smaller tubular extension, and a piston mounted in said chamber, of a cooling chamber surrounding the tubular extension, said cooling chamber having a valved inlet and outlet communicating with said chamber at one side of the tubular extension, and a passage forming a communication between that side of the piston opposite the combustion chamber and the cooling chamber at that side of the tubular extension opposite the inlet and outlet, whereby a cooling stream of air is propelled in alternately opposite directions through the cooling chamber, said cooling stream of air being divided and deflected by the tubular extension.

874,484. Vehicle and Spring Thereof. Elmer L. Brillhart, Pentwater, Mich. Filed Sept. 27, 1906. Serial No. 336,429.

1. A spring comprising oppositely disposed leaves each fulcrumed on the top of the other at the free extremity thereof.

874,520. Change Speed and Reversing Mechanism. George W. Marble, Chicago, Ill., assignor of one-half to William R. Donaldson, Chicago, Ill. Filed Jan. 10, 1906. Serial No. 295,372.

1. A friction speed transmission device embodying a continuously rotating shaft, a wheel rigidly secured thereon having a friction face at its hub and within its periphery, an oppositely facing friction disc or wheel slidably engaged upon the shaft and having a friction face adjacent the hub and within its periphery, a shaft journaled between said discs or wheels, a friction wheel rigidly secured on each end thereof, one extending into position to engage either friction face of the rotatable friction wheel, the other to engage either friction face of the rotatable friction wheel and means for shifting said friction wheels into engagement with the respective friction faces.

874,563. Power Transmission Device. Andrew Boulanger, Los Angeles, Cal. Filed March 26, 1906. Serial No. 307,984.

A power transmission means comprising a driving shaft, a plurality of gears rotatably mounted on the driven shaft and continually in driven connection with the driving gears, clutch drums connected to the respective driven gears and having rims with internal friction faces, clutch members mounted on and connected to rotate with the driven shaft and extending within the faces of the aforesaid drums, each clutch being provided with an elastic device in the form of a nearly complete ring, one end of which is fastened to the inner clutch member, the said ring extending within the annular drum rim and having an inclined end, an actuating member in each clutch moving radially and provided with an inclined portion for engaging the inclined end of the clutch ring to distend said ring, and an operating bar axially movable in the driven shaft and provided with an inclined portion to engage the said actuating member of each clutch, said operating bar being cylindrical and having flatted portions on each side of its inclined portion, said bar having notches in its flatted portion and a spring actuated device having a projection for engaging in said notches.

874,627. Transmission Gear for Automobiles. Charles W. Smart, Memphis, Tenn. Filed April 30, 1906. Serial No. 314,576.

1. In an apparatus of the class described, the combination with a driving shaft, of a friction disc arranged for rotation on said driving shaft, a pair of shafts mounted for rotation, one each side of the friction disc, and one of which shafts is arranged to be shifted longitudinally, and both of the shafts being driven from the driving shaft, a pair of opposed friction wheels mounted on the shafts and engaging on the side faces of the friction disc, means whereby one end of one of the shafts is moved to and from the friction disc, and means arranged upon the longitudinally moving shaft and upon the shaft carrying the friction disc for reversing the motion of said disc when the longitudinally moving shaft is shifted from one position to another.

874,657. Variable Gearing. Franz Burger, Fort Wayne, Ind., assignor of three-fourths to Henry M. Williams, Fort Wayne, Ind. Filed April 17, 1907. Serial No. 368,722.

1. The combination with a wheel having a plurality of concentrically arranged rings of friction surfaces theron and channels between said rings, of a pinion having a friction surface to engage said friction surfaces.

874,693. Explosive Turbine. Frederick W. Luedke, Trenton, N. J. Filed Aug. 15, 1904. Serial No. 220,846.

1. In a device of the class described, the combination with a turbine wheel, of an explosion cylinder having an exit adapted to deliver its charge to the turbine wheel for operating said wheel, means controlling the passage of the exploded charge through said exit to the turbine wheel, and means for exploding a charge within the cylinder, said charge exploding means being adapted to release the means controlling the passage of the exploded charge to the exit.

874,767. Shock Absorbing Device. George S. Hill, Bradford, Mass. Filed March 5, 1906. Serial No. 304,155.

1. A shock absorber for vehicles, comprising a drum and a band engaging the same, constituting co-operating frictional members, one of which is attached to the spring supported body of the vehicle and the other to the supporting base, said members being constructed and arranged to loosen the band when the body and base approach each other and to tighten the band when they separate, and adjustable means for limiting the loosening movement of said band.

874,802. Vehicle Steering Gear. John P. Simmons, San Francisco, Cal. Filed March 20, 1907. Serial No. 363,368.

1. A steering mechanism including a fixed wheel axle having horizontal disc-shaped tables at each end, and ball-bearings fitted around the lower side of said discs, a chambered wheel center within which said horizontal bearing is contained, means entering one side of said chamber and bearing directly upon one side of the disc shaped table ends of the axle to maintain a bearing contact between the opposite side of the chamber and the contiguous side of the table ends, a vertically disposed ball bearing, a wheel hub within which it is fitted, said bearing enabling the wheel to turn freely around the horizontally adjustable portion.

874,811. Motor Vehicle Driving Gear. George A. Weidely, Indianapolis, Ind., assignor of one-half to Harold O. Smith, Indianapolis, Ind. Filed June 1, 1907. Serial No. 376,825.

1. In an automobile, the combination, with an axle casing and a driving pinion, of an inner bearing and an outer bearing for said pinion, and suporting means for both of said bearings fitted upon the same portion of the axle casing.

874,844. Detachable Wheel Rim. Raymond Healy, Brooklyn, N. Y. Filed Dec. 28, 1906. Serial No. 349,759.

1. The combination of a tire carrying rim, a felly, a pair of side plates having inclined bearing edges for the rim expanded outwardly and having their inside faces between the felly and rim flush as described, and a pair of circumferential liners superposed in the space between the felly and inside of the rim, all as described to form an expansible solid bearing for the rim extending continuously from the outside of the edge of one plate to the outside edge of the

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opposite plate, as and for the purpose described.

874,852. Differential Gearing. Wilhelm Lorenz, Karlsrube, Germany, assignor to The Firm of Daimler Motorengesellschaft, Unterturkheim-Stuttgart, Germany. Filed June 17, 1907. Serial No. 379,392.

1. A differential gearing comprising a driving shaft provided with a cylindrical part and a central differential shaft carrying a toothed wheel, coaxially arranged with the driving shaft, and a second differential shaft inclosing the central shaft, and provided with a casing having teeth, and planet wheels carried by the said cylindrical part and meshing with said teeth and the said central toothed wheel.

874,878. Vehicle Steering Device. Edward J. Vraalstad, Buffalo, N. Y. Filed May 29, 1906. Serial No. 319,367.

1. In a steering gear for vehicles, the combination with a steering rod, and a duplex screw thread thereon, of two nuts, one for each thread, a swinging member carried wholly by said nuts and actuated by the movements thereof.

874,913. Starter for Explosion Motors. Herman J. S. Lewis, New York, N. Y., assignor of one-half to John H. Dale, New York, N. Y. Filed March 4, 1907. Serial No. 360,346.

1. A spring operated starter for explosion engines comprising two parts or members independently revoluble on the crank shaft of the engine, a power spring impelling said members angularly with respect to one another, and a lever pivoted coaxially with said members and movable in one direction to engage one member to the shaft and movable in the other direction to engage the other member to said shaft, said directions being in the plane of rotation of said shaft, and means for holding the non-engaged member stationary in each case.

874,955. Sparking Mechanism for Explosion Engines. Louis A. Gianoli, Paris, France. Filed Jan. 29, 1907. Serial No. 354,782.

1. The combination with the rotary and stationary elements of a magneto generator, of a stationary insulating ring having an internal rack and contents, a rotary gear connected to said rotary element to be driven thereby, a planet gear of conducting material meshing with said rack and rotary gear, and adapted in its planetary movement to make electrical connections with said contacts, and a wire in which current is induced by the relative movement of the rotary and stationary elements, said wire being electrically connected to said rotary gear, substantially as described.

874,963. Holder for Automobile Top Bows. Stephen D. Hunter, Philadelphia, Pa. Filed Aug. 24, 1907. Serial No. 389,940.

1. A holder for the bows of an automobile top, comprising a rod, a member carried at one end of the rod against which one outside bow is adapted to abut, a series of spacing plates supported by, and freely movable along, said rod and adapted to be arranged alternately with respect to the bows, and an end plate carried by the rod and adapted to abut against the other outside bow and means to move the end plate toward said end member, thereby moving all the plates along the rod and clamping the bows.

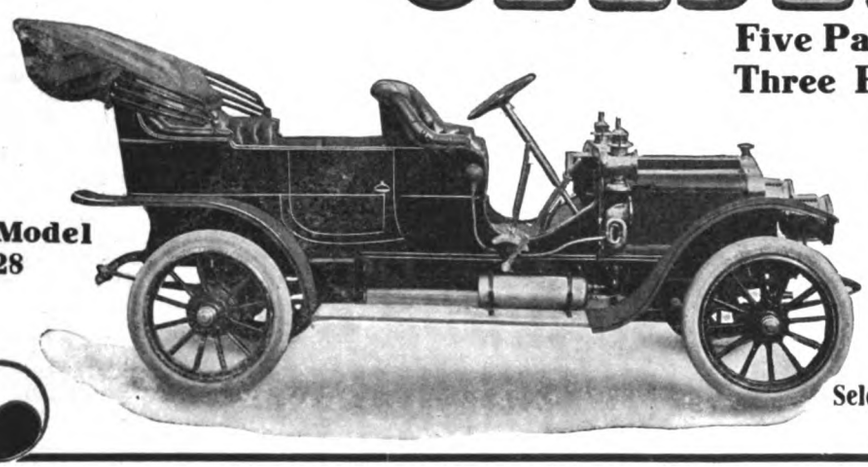
874,964. Pneumatic Tire Protector. William M. Jamieson, Te Papa, near Onehunga, New Zealand. Filed July 11, 1906. Serial No. 325,728.

1. In a pneumatic tire protector, the combination of a box having a transversely corrugated plate adapted to be fitted to said tire, and means for securing a solid tire to the box.

874,978. Power Transmission Gearing. Vernon D. Munger, Beach City, Ohio. Filed March 29, 1907. Serial No. 365,342.

1. A power transmission gearing comprising a drive shaft, beveled pinions fixed thereon, a longitudinally adjustable driven shaft, a beveled gear wheel fixed thereon,

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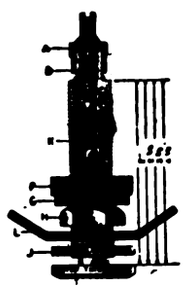
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and other beveled gear wheels mounted on said driven shaft and movable longitudinally thereon, each gear wheel being nested in the next gear wheel of larger size.

874,989. Steering Gear. George G. Porter, Syracuse, N. Y., assignor to The Porter-Cable Machine Co., Syracuse, N. Y., a Corporation of New York. Filed June 10, 1907. Serial No. 378,202.

1. In combination with a steering member; a steering post; a gear secured to a steering member; a fixed gear provided with a greater number of teeth than the first gear; a pinion meshing with both of said gears; and connections between the steering post and the pinion for moving the latter over the gears.

875,053. Pneumatic Tire. Charles E. Duryea, Reading, Pa. Filed April 8, 1907. Serial No. 366,982.

1. A pneumatic tire having thickened edges, in combination with a rim grooved along its sides and provided with inflatable tubes adapted to firmly lock the edges of the tire within the grooves.

875,254. Automobile Frame Member. Matthew W. Gartshore, Reading, Pa., assignor to Parish Manufacturing Company, Reading, Pa., a Corporation of New Jersey. Filed April 5, 1906. Serial No. 309,971.

1. An automobile frame comprising pressed steel side members each having an inwardly extending bearing flange the edge portion of which is turned aproximately parallel with the vertical web at intervals and the unbent intermediate portions of which inwardly extending transom connecting brackets with integral ribs, and separate transom members entending between the vertical web portions of said side members and said bracket ribs and rigidly bolted to said brackets substantially as set forth.

875,297. Gasolene Engine. George W. Stanley, Logansport, Ind., assignor of one-eighth to George D. Miller, one-eighth to Ernest A. Tucker, one-eighth to Arthur E. Stanley, one-eighth to Frederick H. Klinsick, and one-eighth to William D. Craig, Logansport, Ind. Filed Aug. 20, 1906. Serial No. 331,352.

1. The combination with an engine having cylinders arranged in oppositely disposed sets, pistons in said cylinders, a power shaft, piston rods connected to said power shaft, a parallel shaft driven from the power shaft, valve chambers carried by the cylinders, valves in said chambers, eccentrics on the second mentioned shaft, blocks on the eccentrics, straps holding the blocks in place, and means for pivotally connecting two valves of oppositely disposed cylinders to the same block.

875,321. Transmission Mehcanism. Samuel C. Carter, Los Angeles, Cal., assignor of one-third to Carlisle H. Esler, Los Angeles, Cal. Filed Aug. 14, 1906. Serial No. 330,615.

1. The combination with a driving shaft of a plurality of gears shiftably mounted thereon, a housing for said gears, means for shifting said gears with respect to said driving shaft, wheels on said driven shaft, gears mounted on said driven shaft, and means for shifting said gears and said driven shaft for causing a variable rotation of said wheels.

875,351. Resilient Tire. Isaac W. Hodgson, Minneapolis, Minn., assignor of one-fourth to Philip W. Herzog, St. Paul, Minn. Filed Feb. 25, 1907. Serial No. 359,047.

1. In a resilient tire, the combination with a rim, of a tread made up of a multiplicity of yieldingly connected tread sections, and springs interposed between said rim and tread sections, and having interlocking engagement at their outer ends with the adjacent ends of said tread sections, substantially as described.

875,358. Combined Brake and Steering Knuckle. Joseph E. Landry, New Bedford, Mass. Filed Oct. 18, 1907. Serial No. 398,101.

1. In combination, an axle beam, an axle, and a knuckle joining them, the axle member of the knuckle being a disc journaled to the beam on a vertical axis.

875,401. Variable Speed and Reversing Gear. James Worthington, Manitowoc, Wis. Filed May 6, 1907. Serial No. 372,169.

1. The combination of a driving shaft, a beveled gear wheel theron, a set of transmission shafts, a beveled gear wheel on each, arranged to mesh with the beveled gear wheel on the driving shaft, transmission gears on said transmission shafts, operatively connected with the corresponding beveled gear wheel, a driven shaft, and shiftable gear wheels thereon adapted to be moved into and out of mesh with the transmission gears.

875,472. Induction Coil and Box for Explosion Engines. Richard Varley, Englewood, N. J., assignor to Varley Duplex Magnet Co., a Corporation of New Jersey. Filed July 24, 1907. Serial No. 385,378.

1. An induction coil unit for explosion engines comprising a U-shaped sheet of paramagnetic material, an L-shaped frame assembled therewith to form a casing, and an induction coil within such casing.

875,508. Automobile Train. Angelo De Luigi and Carlo Ramazzotti, Milan, Italy. Filed March 22, 1906. Serial No. 307,763.

1. In a traction device, a train of vehicles, each having a pivoted axle, two telescopic members over said pivot having a cardan joint at their outer ends, bevel gearing connected with each joint, and chains for transmitting power to and from said gearing.

875,534. Magneto Igniting Device for Explosive Engines. Henri de la Valette, Paris, France. Filed Sept. 7, 1905. Serial No. 277,423.

1. A magneto-electric machine, comprising an armature, oscillating field magnets, an oscillating distributor of induced currents, and means for mounting the magnets and distributor, whereby they oscillate cooperatively one with the other about the axis of the armature.

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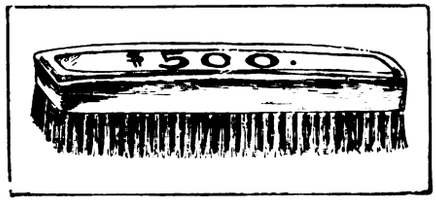
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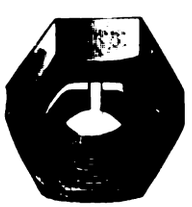
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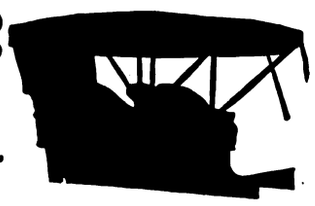
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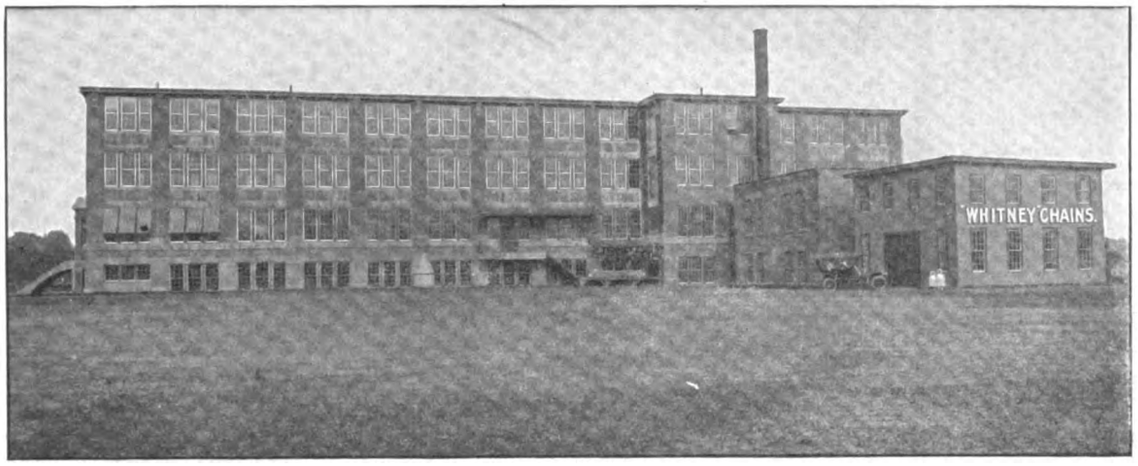
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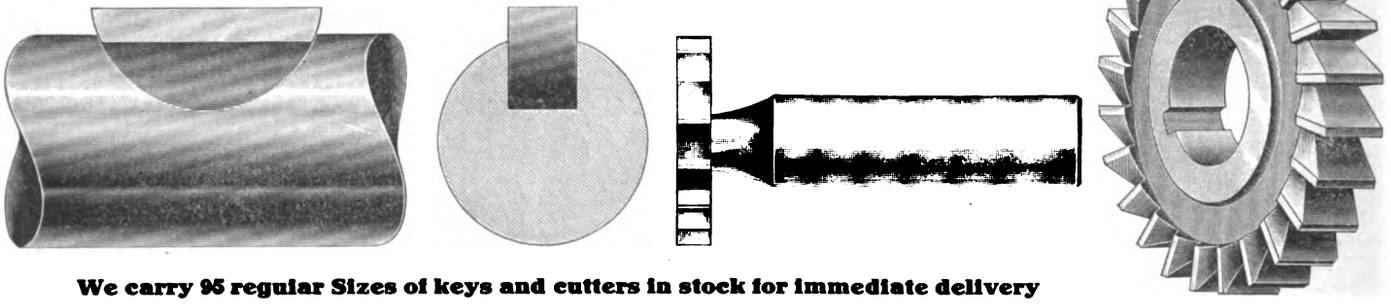
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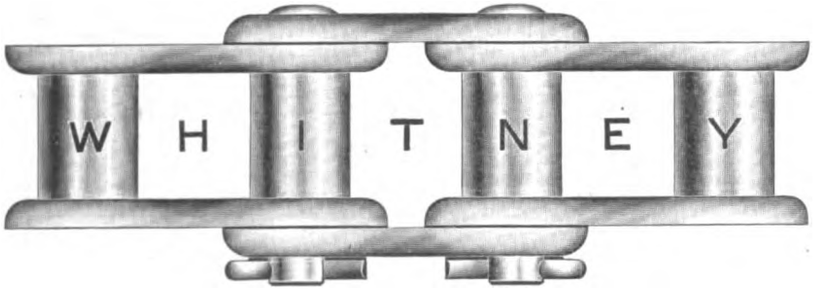


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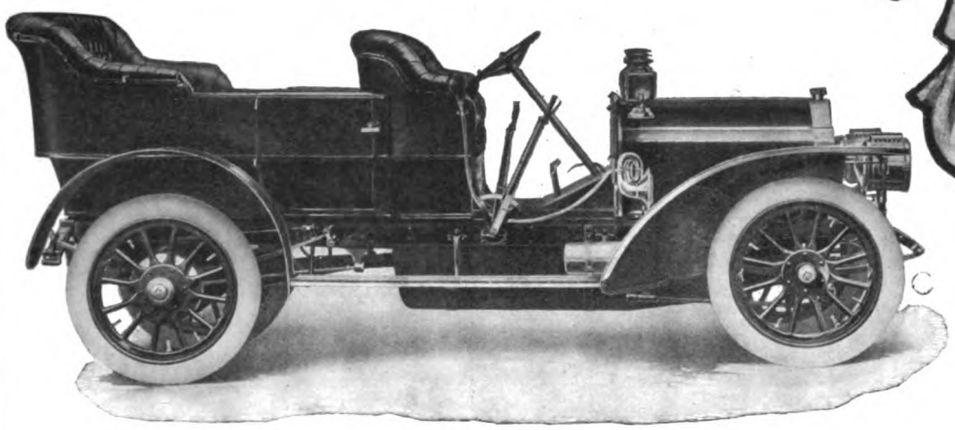
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Then, in his haste to close a sale, the jobber would let wrong gear ratios go out — that hurt the consumer, the dealer and ourselves. For the jobber knows no law.



So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

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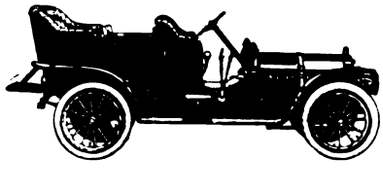
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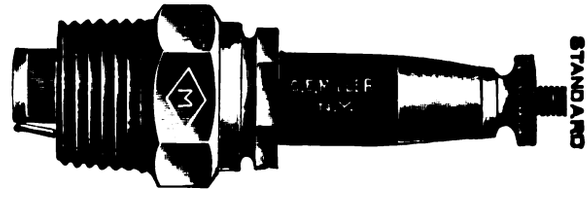
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Ability, in an automobile, is a matter of mechanism, not of body design.

External beauty has not been slighted in the Marmon—a glance or two shows that.

But, to the man who really seeks a dependable car, we recommend something more important—a careful study of the mechanism of the Marmon.

In every detail of construction—motor, control, transmission, lubrication, suspension system, materials, workmanship—he will find a distinctive excellence, a score of notable patented features.

The Marmon's dependability—as reliable as that of a railroad train—commends it to the prudent man.

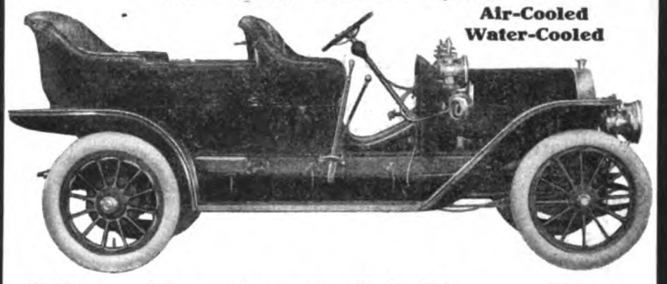
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Air-Cooled
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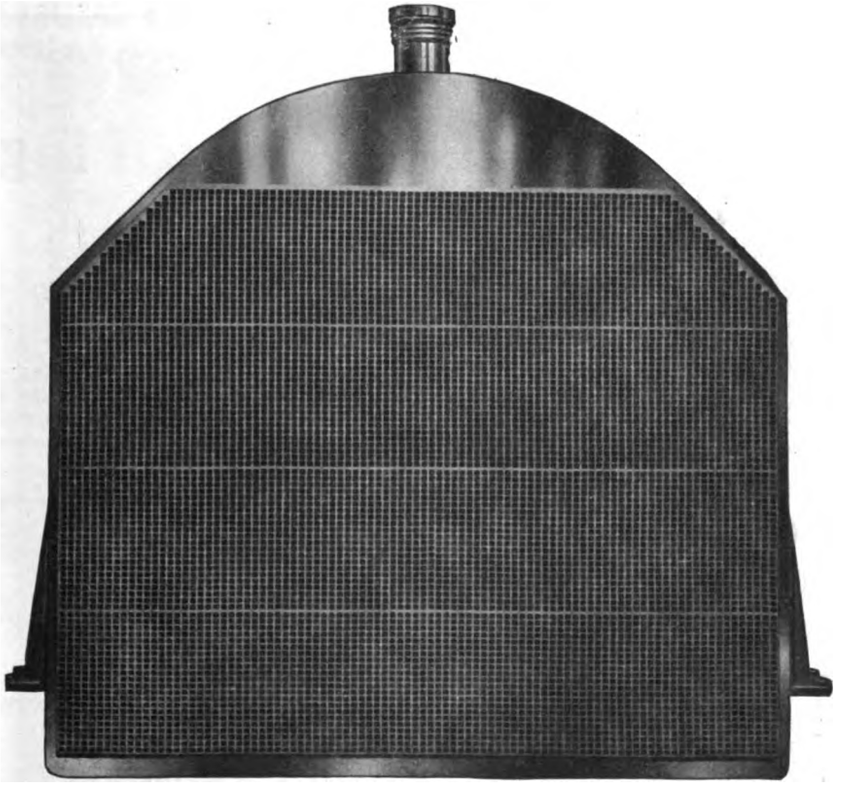
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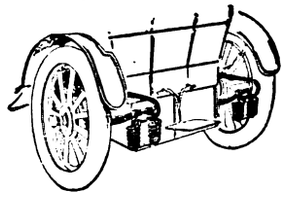
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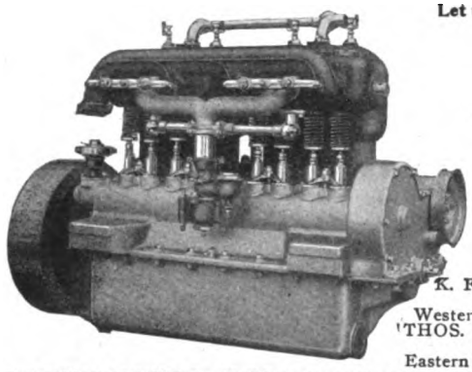
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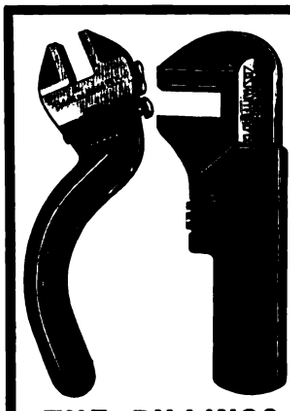
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4-cylinder with self-contained oiling system. Motors are ready for coupling any standard magneto.

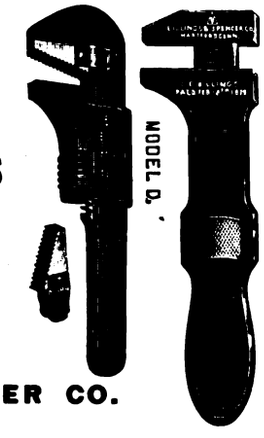
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Large facilities and dependable deliveries.

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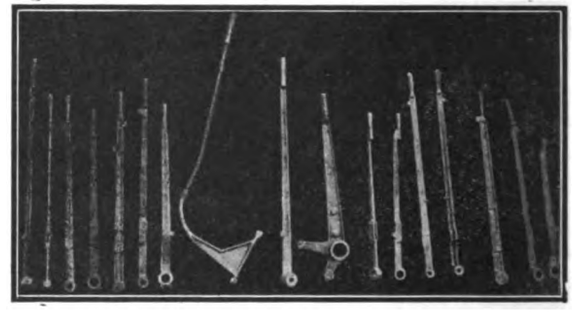
Harroun Auto Bumper

DON'T GET BUMPED
The First in the Market
The Best in the Field
Others are Imitators

THE HARROUN BUMPER PATENT has been allowed, and as soon as it can be issued we will bring suit against all USERS of Bumpers infringing on and not manufactured under the HARROUN license.
R. W. HARROUN, Patentee.

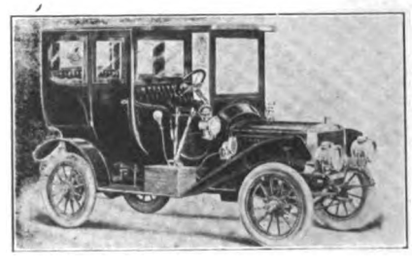
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Sole Makers
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Large Contracts for entire outputs. Specially equipped for Limousine and all other high-class enclosed work.
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For every dollar invested, including purchase price and maintenance, there are two to three times as many miles of actual service in a Single Cylinder Cadillac as in any other motor car.

This is not an empty claim. It is a fact borne out by the experiences of 16,000 users all over the world. Many of these have owned their Cadillacs for five years, have driven their cars 60,000 miles or more and are still using them.

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so far as we know, has ever been discarded because worn out or unfit for further service.

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The Truth About The Automobile and What It Costs To Maintain One

send for our 64-page Booklet containing the SWORN affidavits of a large number of users showing an average expense for repairs to car of less than 50 cents per week and averaging more than 18 miles per gallon of gasoline under all road conditions, mud, sand, snow, hills and mountains.

The booklet contains many interesting experiences and remarkable performances and proves conclusively the wonderful capabilities of the Single Cylinder Cadillac. It contains much information and advice which every prospective automobile buyer wants to know.

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THE INCOMPARABLE

WHITE

THE CAR FOR SERVICE



White Scores the Usual 100 Per Cent.

The two White Steamers entered in the Bay State Automobile Club Endurance Run, February 22d, finished with perfect scores. Although the conditions of the run were not sufficiently severe to eliminate as large a proportion of the contestants as is usual, it should be noted that the White was the only make of those entering more than one car which brought through all of its cars with perfect scores.

In this respect the run resembles:

1—The Quaker City Motor Club Endurance Run, January 1-2, where the single White entry was the only car to make a perfect score, thus winning the contest from the 27 gasoline cars which competed against it.

2—The Chicago Motor Club Endurance Run, November 25-28, where the White was the only make which brought through all of its cars without road penalties.

3—The 1907 Glidden Tour wherein the White was the only make represented by three or more cars which was not penalized.

This regularity of the White performance, as compared with the extreme irregularity of the performance of cars of the other style of motive power, has established beyond question the superior reliability of the White.

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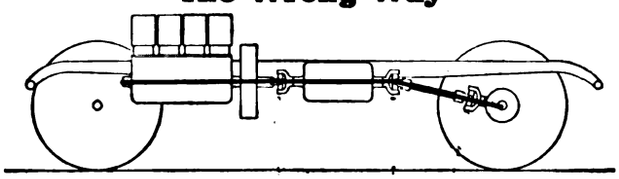
THE WHITE COMPANY

CLEVELAND, OHIO

New York City, Broadway at 62d St.
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Chicago, 240 Michigan Ave.
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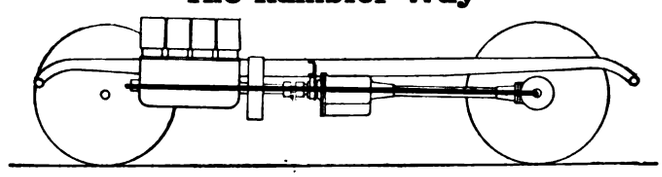
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The Wrong Way



Note Deflection at Universal Joint

The Rambler Way



No Power Lost in Transmission

Rambler Straight Line Drive

Of the new ideas in automobile construction none are of greater value than the straight line drive system as applied to the 1908 Ramblers.

It is well known that no matter how good or carefully made the universal joint, there is an inevitable loss of power and great wear due to deviation from a straight line in the power transmitting system and the loss increases with the square of deflection.

With the Rambler straight line drive there is no deflection, hence no loss and the full power of the motor is delivered to the driving axle.

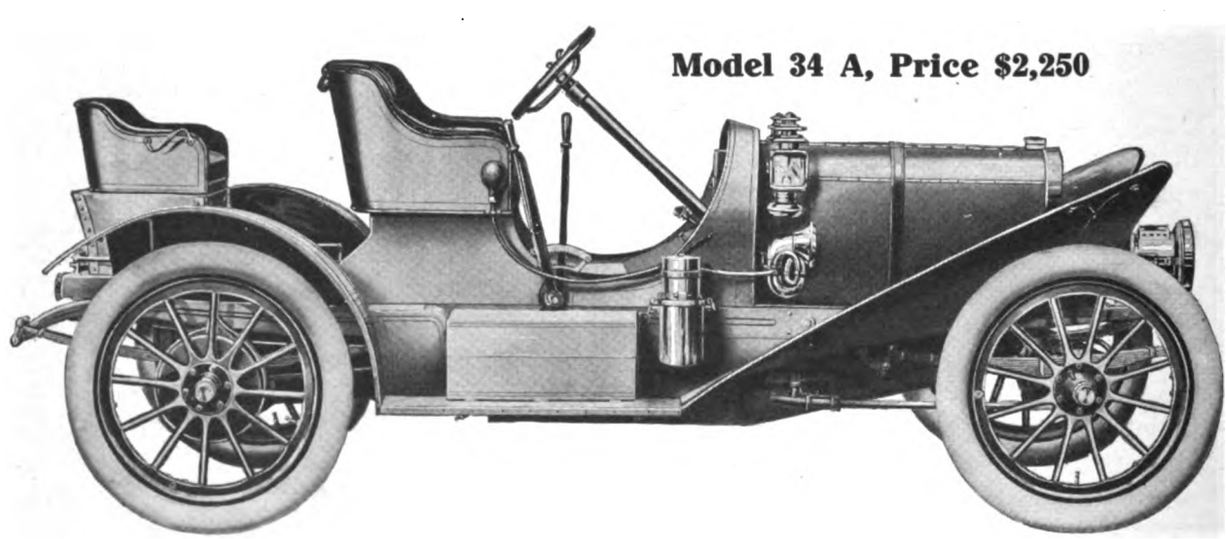
This is but one of many valuable features; our catalog tells of others of equal value; write for it today.

Thomas B. Jeffery & Company

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Branches and Distributing Agencies:
Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

Model 34 A, Price $2,250



This four cylinder chassis, equipped both as a 3-passenger roadster and 5-passenger touring car. Price of each style $2,250. The Rambler Utility Car with double opposed motor, $1,400.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, March 5, 1908. No. 23

MORTON TRUST CO. MAKES A MOVE

Places Itself in a Position to Foreclose Electric Vehicle Co. Mortgage—if Deemed Advisable, Says Counsel.

The Morton Trust Co., of New York, which, as trustees, holds the $2,250,000 mortgage bonds of the Electric Vehicle Co., Hartford, Conn., now is in position to file action for foreclosure whenever it deems advisable.

On Thursday last, 27th ult., Judge Cross sitting in the United States Circuit Court at Elizabeth, N. J., directed the Electric Vehicle Co. to show cause on the following Monday why the trust company should not be permitted to file such a bill and on that day signed an order granting such permission.

When a Motor World man yesterday sought A. W. Putnam, general counsel for the Morton Trust Co., to learn the result of Monday's proceedings, and asked for particulars of "the proceedings looking to foreclosure on the Electric Vehicle Co.," Mr. Putnam at once replied that "no action of the sort had been taken."

When evidence was produced, and in response to further inquiries, he stated that the action in question did not necessarily imply foreclosure. He explained that when the receivership proceedings were instituted, the court, as is usual in such cases, issued an injunction restraining the filing of any and all suits against the company. The Morton Trust Co. merely had sought to have this injunction modified sufficiently to place them in position to bring foreclosure proceedings. Mr. Putnam made the point also that when the receivers were appointed the court did not declare the Electric Vehicle Co. insolvent, as one report had stated.

When pressed for the real meaning of the trust company's action, Mr. Putnam declined to be more specific.

"It simply means that the court has granted a preliminary order permitting us to file a bill to foreclose the mortgage if we deem it advisable to do so," was all he would say.

Meanwhile, the receivers have put about 100 men to work in the Hartford factory to finish the cars which were in a state of partial completion at the time of the failure in December last. It is stated that buyers are in sight for practically all of the cars that will be made up.

"A. A. D. A." Gives up the Ghost.

The Association of Automobile Dealers of America—what there was of it—is off, that is, off the map. It was never very much more than a name and a few large newspaper paragraphs, and all these and anything else that may have assumed tangible shape, have been taken over and will be decently interred and forgotten by the National Automobile Dealers' Association, which was formed during the Chicago show in December last by a group of legitimate dealers. C. A. Wardle, of New York, who fathered the "A. A. D. A.," fixed its dues at $25 per year, and selected himself as general manager, is no longer so keenly interested in the retailers' welfare. He has secured a good berth in the insurance business.

Budlong's Successor not yet Selected.

No successor of M. J. Budlong as general manager of the Association of Licensed Automobile Manufacturers has been yet selected. The executive committee held a meeting in New York on Tuesday last, but no choice was made, nor is there any clue to the man for the place. Another session of the committee will be held next week, until which time Mr. Budlong will remain in office.

Perrett Leaves the Diamond Service.

W. M. Perrett, for several years manager of the Diamond Rubber Co.'s Detroit branch, has resigned that office. Temporarily, the vacancy will be filled by George J. Bradley, who is in charge of the Diamond depot in Cleveland.

TRYING TO MAKE TROUBLE FOR POPE

Unfriendly Toledoans Sue for His Removal as Receiver—Basis of the Suit and the Allegations Made.

Toledo interests which for several months apparently have been striving to make trouble for the receivers of the Pope Motor Car Co. returned to the attack again late last week. Their latest onslaught took the form of a petition filed in the United States Circuit Court in Toledo praying for the removal of Albert L. Pope and George A. Yule as receivers of the company.

The petitioners allege that these receivers have conducted matters without proper regard for the Toledo creditors; they assert that $800,000 in claims against the Toledo plant are held by the Pope Mfg. Co., of Hartford, in which the present receivers are personally interested; further that these accounts do not appear on the books of the Pope Mfg. Co., which leads the petitioners to doubt their validity. The petitioners charge that Yule and Pope by past transactions indicate their desire to dismantle the Toledo plant, and seek to substantiate this charge by citing the sale of old and obsolete tools and machinery from the Toledo plant to the Pope Mfg. Co. last year and the return since last November of these implements to Toledo charged against the Toledo plant at the original invoice prices.

The case was heard by Judge Robert W. Taylor on Saturday last. Johnson Thurston, a Toledo attorney, appeared for the plaintiffs, and Clarence Brown, of Toledo, and Lewis H. Freedman, of New York, for the receivers. After a short hearing, in which no vital point was brought out, Judge Taylor suggested that it were better that both sides to the dispute settle the matter among themselves and adjourned the case without date. On Monday, the Toledo papers reported that an agreement had been reached to release Receiver Pope and

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to retain Mr. Yule as sole receiver; but the report is mere moonshine.

It can be stated authoritatively that Messrs. Pope and Yule are in accord and working in entire harmony. There are no differences between them and at any future hearing that may be set by Judge Taylor, they will appear and present testimony to prove the falsity of the allegations made in the Toledo petition.

From the best information obtainable, it appears that in Toledo there are men possessed of personal grievances, and who long have been gunning for Albert L. Pope and seeking to disturb the peacefulness of his tenure as receiver. They are said to represent less than $5,000 of merchandise creditors, but they have the ear of the Toledo press and periodically have been able to create "sensations" which have been wired to the four winds. The mouthpiece of these persons is a Toledo lawyer who formerly served the Pope interests, but who was not retained when the receivership was instituted. It is only a few weeks since that a tall story of the alleged refusal of the Pope receivers to grant an option on the Pope-Toledo plant to Joseph M. Schwab was floated, despite the fact that an option not only had been granted but renewed, although Schwab had advanced no money. The latest renewal of this option expired on February 24th, following which the present movement ostensibly to remove Receivers Pope and Yule, but in reality aimed only at Pope, was undertaken. Several of the creditors have expressed themselves as deploring the Toledo attitude. They say the continued effort to create disturbance has served more than anything else to injure the Pope-Toledo interests.

Meanwhile the receivers have accumulated a fund of several hundred thousands of dollars out of which it is believed a creditors' dividend of about 20 per cent. shortly will be paid. It is necessary to secure the sanction of the Federal courts in so many States that not even an approximate date of payment can be set.

Colt Had but $30 Cash on Hand.

Schedules in bankruptcy filed last week by the Colt Runabout Co., New York, which started with a splurge and died young, show liabilities of $14,213 and sixteen other claims, the amounts of which are unknown, and assets of $1,875. The latter, which give a clue to shadowy foundations on which the concern was reared, consist of stock, $1,075; tools, $50; office furniture, $70; accounts, $650, and cash $30. Among the creditors are Kane & Robinson, Chicago, $4,000, secured; Minneapolis Steel & Machinery Co., $2,700, secured; and South Side Garage, Kansas City, Mo., $2,000.

The Pacific Coast Taximeter Cab Co. has been organized in San Francisco with capital stock of $1,000,000. When it will begin operations is not known as to date the venture does not appear to have advanced beyond the "stock for sale" stage.

In the Retail World.

Roberts & Gardner have opened at 93 Jefferson avenue, Grand Rapids, Mich. They will handle the Jackson.

The Simplex Motor Co. is one of Boston's latest additions; it opened sales rooms at 173 Huntingdon avenue last week. W. H. Woods is its manager.

Hall Brothers will open a garage in Manitowa, Wis., and have begun the erection of a suitable building. The firm has taken the agency for several cars.

E. C. Bald, well known as a former racing crack, has located in Pittsburg. He will be sales manager for the Crescent Automobile Co., agent for the Ford.

H. Paulman & Co., Chicago agents for the Pierce Arrow, have opened a branch at 217 Fourth street south, Minneapolis, Minn. R. J. Randolph has been installed as manager.

The Wabash Automobile & Electric Co., 925 Wabash avenue, Terre Haute, Ind., is erecting a concrete garage at 662-4 Ohio street, that city. Its dimensions will be 140x50 feet.

Officers have been elected by the Mississippi Valley Automobile Co., St. Louis, as follows: President, Max Orthwein; vice-president, James A. Seddon; secretary-treasurer, Harry S. Turner. The officers constitute the board of directors.

Walter L. Githens, formerly treasurer, has been elected president of the Chicago Automobile Trade Association, Henry L. Paulman taking the office of treasurer. Frank Sparks was chosen secretary and Harry Tillotson, vice-president.

Charles P. Root, for three years editor of Motor Age, became a real tradesman last week when he established himself at 431 Wabash avenue, Chicago. He will handle the Dorris car, in addition to a line of motor boats.

Fire destroyed Frederick J. Lovatt's garage at 331 South Orange avenue, South Orange, N. J., Friday night last, 29th ult. All but two cars were saved. The total loss was about $20,000, the insurance not being stated. The cause of the fire also is unknown.

Lynn C. Lull, vice-president and general manager of the Auto Vehicle Co., of Los Angeles, died as he was being taken to a hospital in Detroit, February 21st. He had been ill for several months with heart disease, but had recovered sufficiently to start east on a business trip.

The Boyer Motor Car Co., located at Golden Gate avenue and Larkin street, San Francisco, has been attached by the sheriff. The company, which was agent for the Franklin and Royal Tourist, recently suffered by fire, which is said to have helped bring about the present predicament. The general belief, however, is that the company will be straightened out of its financial difficulties.

What is claimed to be the best equipped garage in Ohio, was opened to the public on Sunday last in Cleveland. It is the new four story garage of the Citizen's Motor Car Co., and besides offices, waiting rooms, salesrooms and machine shop, has capacity for about 500 cars. The building cost $300,000. On the opening day several thousand people viewed the big garage, listened to music from a band especially engaged for the occasion, and carried home souvenirs in the shape of flowers.

The Week's Incorporations.

Warren, Ohio.—Valley Automobile Co., under Ohio laws, with $20,000 capital. Corporators—H. C. Farnham, A. W. Sykes, John A. Fuller, E. G. Davis, and Evan Thomas.

Boston, Mass.—Taxicab Co., under Massachusetts laws, with $300,000 capital. Corporators—Harold F. Parker, president; Joseph A. Little, treasurer, and Herbert H. Frey, Boston.

Newark, N. J.—Star Motor Car Co., under New Jersey laws, with $25,000 capital; to deal in automobiles. Corporators—Lester B. Harris, Leon B. Harris and Paul F. Gillette, all of Newark.

Binghampton, N. Y.—Sterling Alternating Ignition Co., under New York laws, with $25,000 capital. Corporators—H. L. Loper, Richmond Hill; A. R. Kelly and F. Knowlton, New York City.

Hoboken, N. J.—Hudson Tire & Rubber Co., under New Jersey laws, with $100,000 capital; to manufacture all kinds of rubber tires. Corporators—August H. Peterson, Richard Shippen and William Shippen.

Utica, N. Y.—L. L. Laman Auto Top Co., under New York laws, with $5,000 capital; to make automobile tops and attachments of all kinds. Corporators—W.. E. Kelly, Clinton; L. L. Laman and G. W. Griffiths, Utica.

New York City, N. Y.—Stuyvesant Auto Garage, under New York laws, with $10,000 capital. Corporators—Loretta G. Buckley and Thomas J. Buckley, 1751 Clay avenue; Frank I. Carney, 942 Eighth avenue, New York City.

New York City, N. Y.—Vanderbilt Cup Garage, under New York laws, with $5,000 capital. Corporators—Edward D. Cronin, 277 Vanderbilt avenue, Brooklyn; Fred Knowlton, 638 East 139th street, New York City; G. Whyard, Jersey City, N. J.

New York City, N. Y.—Central Tire Repair Co., under New York laws, with $2,000 capital. Corporators—Frank Van Tassel, 220 West Forty-eighth street; John Graham, 148 West Eighty-third street, New York City; Frederick G. Hurst, Richfield Park, N. J.

New York City, N. Y.—Percy Ford Co., under New York laws, with $1,000 capital; automobile parts. Corporators—Percival M. Ford, 226 Columbus avenue, Boston; Louis G. Duquet, 107 West Thirty-sixth street; Edna Hickey, 1402 Broadway, New York City.

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YEAR BEGINS WELL IN EXPORTS

January Figures Show Substantial Net Gain —Growth in Sales of Higher Priced Cars Abroad.

An auspicious opening for the year's exports of American automobiles and parts was afforded by the business recorded during the month of January, ult., which exhibited a net gain of $29,185 over the corresponding returns of January, 1907. Oddly enough, however, a smaller number of cars was exported than last year, the respective quantities being 180 as against 214. Owing to the increased valuation of the more recent shipments, the valuation for cars alone showed an increase of nearly $58,000; more than offsetting a decrease of some $28,600 in value of exported parts.

A still more curious fact is revealed on examining the distribution of the exports. Only two countries, and one general group shared in the increased business. The United Kingdom, with an increase of $128,107, France, with $12,635, and "Other countries" with about $800, were responsible for the net gain in the total figures. Of the eleven geographical divisions netting less business for the month than last year, British East Indies, Italy and British North America lead.

During the seven months ending with January 31st, 1,367 complete cars were exported, as against 1,369 for the same period of 1907. But again the increased valuation of the product served to overcome a decrease in the valuation of parts, leaving a net gain in business of $284,000, or thereabouts. Of the six divisions showing gains for this period, the United Kingdom leads with $336,291, France with $96,561, and the West Indies and Bermuda, South America, and Germany following with $82,476, $37,967 and $13,072, respectively, Mexico with $191,167. British Australasia and British North America exhibited the most marked declined. The report in detail follows:

	—January—		Seven Months Ending January		
	1907	1908	1906	1907	1908
Automobiles and parts of	.....	.....	$1,438,600	.....	.....
Automobiles*	$311,242	$369,075	.....	$2,103,550	$2,391,460
Parts of	65,225	36,577	.....	325,993	321,999
Exported to—					
United Kingdom	66,698	194,805	421,982	562,958	899,249
France	26,380	39,015	113,696	177,663	274,224
Germany	9,171	2,616	30,824	67,671	80,743
Italy	41,070	15,231	62,094	68,825	43,452
Other Europe	10,082	6,353	67,597	87,761	83,322
British North America	37,638	19,064	250,116	496,094	469,541
Mexico	55,932	47,597	145,179	465,073	273,906
West Indes and Bermuda	35,975	31,956	104,893	100,043	182,519
South America	23,839	21,551	40,490	131,381	169,348
British East Indies	4,673	1,910	24,149	21,142	19,357
British Australasia	53,157	14,668	117,365	169,577	137,018
Other Asia and Oceania	9,713	8,051	29,746	66,666	66,963
Africa	819	697	20,180	7,402	6,600
Other countries	1,320	2,138	10,289	7,287	7,217
Total automobiles and parts	$376,467	$405,652	$1,438,600	$2,429,543	$2,713,459

* Number not stated prior to July 1, 1906.

Annual Report of a Rubber Company.

In the annual report of the Consolidated Rubber Tire Co., which last year added automobile pneumatic tires to its productions, a decrease is shown in gross sales for the year ended December 31 last of $88,634, and in net earnings of $28,505. Following is the income account, with comparisons:

	1907.	Decrease.
Gross sales	$1,133,213	$88,634
Other income	70,653	3,847
Total income	$1,203,866	$92,481
Operating expenses	1,146,856	63,976
Net earnings	$57,010	$28,505

These net earnings were sufficient to pay 2 per cent. on the $2,850,500 4 per cent. 50-year sinking fund bonds, as compared with 3 per cent. in the year previous.

According to President Cartwell's report to the stockholders, the decrease occurred during the last three months of the year, after the financial disturbance set in.

Rigdon to Represent the Republic.

Samuel G. Rigdon, for many years the general representative of the Goodyear Tire & Rubber Co., Akron, Ohio, and who has several times covered practically the entire country in the Goodyear interests, has gone with the Republic Rubber Co., Youngstown, Ohio, which last year took up the manufacture of automobile tires. Rigdon will represent the company as general representative of the automobile tire department.

Puritan Takes Over Old Colony Assets.

To satisfy a mortgage, the assets of the Old Colony Light Co., Boston, have been sold, and the property purchased by the Puritan Gas Tank Co., of the same city. To settle the outstanding indebtedness of the old concern, the Puritan company voluntarily has offered the creditors shares of its 6 per cent. non-cumulative preferred stock on a basis of 100 cents on the dollar.

L. J. Sackett has engaged with the Matheson Motor Car Co., Wilkes-Barre, Pa. He will have the title of special representative.

MORSE'S COMPANY READY TO QUIT

Temporary Receivers Appointed for the Mercedes Import — Probability of Voluntary Dissolution.

The Mercedes Import Co., of New York, of which Charles W. Morse, the dethroned and indicted "ice king," and financial wizard was the financial backer, has gone into the hands of temporary receivers. Supreme Court Justice Platzek appointed John S. Primrose, Henry S. Colwell, and Eugene L. Bushe temporary receivers Friday last, 28th ult., fixing their bond at $25,000.

The Mercedes Import Co. maintained pretentious offices and sales rooms at 590 Fifth avenue, Arthur Braun, former secretary to Mr. Morse, is president of the company; John S. Primrose, treasurer, and Robert E. Fulton, secretary. Mr. Morse is a creditor for $25,000, and the National Bank of North America a creditor for $55,479. Other creditors are Arthur Braun, $12,500; R. E. Fulton, $6,300, and C. L. Charley, $43,800. The total liabilities are $115,104, and the nominal assets $146,978.

The assets consist of merchandise, $62,517; accounts, $59,647; bills receivable, $15,215; furniture and fixtures, $6,294; cash, $3,129, and deposits, $249.

The company was incorporated September 18, 1905, with a capital stock of $100,000. Allen & Halle, who inaugurated the taximeter cab service in this city, were at first interested in the company, and afterward Mr. Morse became the backer. Recently C. L. Charley of Paris became uneasy about the company's decreasing business, and sent his brother, Harry, here to investigate. The application for the appointment of receivers was made by officials of the company in proceedings for voluntary dissolution of the corporation, which recently lost the Mercedes agency for America.

Corbin Officials in New Positions.

At the annual meeting of the Corbin Motor Vehicle Co., Buel B. Bassette was promoted from the assistant treasurership and secretaryship to treasurer, and Guy Hutchinson, formerly the New York manager, was elected secretary. The following directors were chosen: Philip Corbin, Charles M. Jarvis, Charles H. Parsons, Charles Glover, Howard S. Hart, Maxwell S. Hart, Buel B. Bassette, Andrew J. Sloper, and Guy Hutchinson. The following were the officers chosen: President, Howard S. Hart; vice president, Maxwell S. Hart; treasurer, Buel B. Bassette; secretary, Guy Hutchinson.

Babcock Opens a Chicago Branch.

The Babcock Electric Carriage Co. has established a branch in Chicago at 1328-1339 Michigan avenu. It is in charge of C. M. Atterbury.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞ Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, MARCH 5, 1908

Sound Waves in Motor Cars.

Among the manifestations of progress, most striking of which are the new problems which are constantly coming up, are the new methods of attacking old problems, which, being less spectacular, for the most part pass unnoticed by the public at large. Thus, the telephone having ceased to be a marvel in the eyes of the average user, modifications in its application and even the introduction of new principles in a subsidiary way, excite less comment to-day, than far less important innovations would have done twenty years ago. So, the motor car having risen to the distinction of a common utility, alterations in its design and the introduction of new methods of studying its phenomena must be of conspicuously evident moment in order to interest the average user.

It is hardly more than a year since the proposal of the Royal Automobile Club to determine the practical utility of motors of current design by means of exhaust gas analyses was hailed with more or less ridicule. Yet the sequel has proved that not only may a good check on carburation be obtained by examining the spent product of the engine, but even a measurable test of the accurary of its physical proportions as well. In the same way, credit is due to British thoroughness in discovering in the refractory cake on cylinder walls and combustion heads, several valuable clues as to carburetter performance as well as lubricating difficulties which, hitherto, had not been suspected to exist. The occultism or apparent irrelevancy of any method of analysis or synthesis does not of necessity preclude all possibility of its ultimate value to the investigator, provided only it has a logical attachment to the subject in hand.

So the notion of designing the automobile with the aid of a tuning fork and a compendium of harmonics instead of by the more obvious and simple method of applying the callipers and scale to someone else's car, is manifestly absurd. Even the idea of further perfecting design by the roundabout method of reducing vibration wholly within the co-ordinate parts appears a little far fetched. At the same time, since vibration is known to contain the germ of truth on which that mysterious and hardly tangible "fatigue of metals" is based, it is resonable to suppose that a certain amount of care expended in applying the laws of wave propagation and interference may be of value in extending the dynamic properties of the structure.

Certainly in so far as it may be applicable in reducing the hum of the parts it is an advance in science which is bound to advertise itself. It frequently happens that the study of vibration is applied with great success in the design of large buildings, bridges and other evolutions of modern engineering. And it is by no means unlikely that the theory advanced in the Fay-Ellsworth paper printed in another column, while adding gray hairs to the head of the automobile designer, may also prove instrumental in prolonging the useful life of his product.

The Wisdom of the Farmer.

One of the most encouraging symptoms to be discerned in the retail situation just now is the rapid and wholesome development of the farmer market, particularly in the broad area which the New Yorker usually dismisses indefinitely as the "middle west." Until within a year or two this factor was viewed largely as a bright future prospect. Present indications point strongly to the fact that it has developed into a feature of real merit, comparable with that of the market of the cities and smaller towns. Efforts which have been put forth to awaken this branch of the market have not been in vain and a good line of business is in sight.

Primarily it has been supposed that the farmer and the farmer's motor buggy would be inseparable. The amount of business done by the motor buggy makers is sufficient to justify this impression absolutely, so far as it goes. But it further appears that a portion of the farmer market has invaded the realm of the second-hand car, and with proverbial shrewdity, if not with the gullability which is supposed to be inherent to the ruralist, has brought to the dealer a surprising amount of sound knowledge of motor matters.

Here is at once an inlet for the wise dealer and an outlet for the foolish. Because a purchaser is going to take his car 30 or 40 miles up state, it is natural to suppose it an easy thing to use him as a sort of unwitting grave digger to assist in the elimination of valueless wares. Even with his intelligence and wisdom it is possible to palm off a surprising amount of junk on the agriculturist, just as it is possible to trick the city dweller. But setting aside any possible scruples in the matter, it is a weakness in the plot, that it is possible to accomplish only one such interment in any given locality. Such practice must inevitably lead to a progressive narrowing of the field.

The modern farmer is not the Reuben of the conventional melodrama. Particularly as found in the middle west, he is a broad, wholesome figure, familiar with modern methods and equipment through reading and hearsay, if not by actual contact. He farms by wholesale and profits or loses in four or five figures, and he must be something of a business man in order to be anything of a farmer. Most of all, his eye is fixed upon the main chance, and however much he may want the motor go-cart, he wants the motor-utility vehicle even more, and is anticipating the time when he can reduce the cost of his crops by eliminating animal traction to the greatest degree possible. Therefore it pays to take care of the farmer. For in caring for his interests, the dealer is not building for his future trade alone. Because of the value of the personal

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testimonial, caring for the farmer, also involves caring for the farmer's neighbors.

The Question of Equipment.

What promises to be a moot point in the industry at some not distant day is the question as to what equipment properly should be included in the selling price of the car. At the present time the spectacle is presented of one group of makers marketing their product with practically no equipment, of another including in the purchase price such accessories as tools, dash lamps, tail lamp and horn, and of a third, making a feature of the fact that the single cost figure is inclusive of everything necessary to the maintenance and operation of the vehicle, including acetylene lamps, top, and a truly liberal set of tools and replacements.

In a general way, this may be considered a point of no particular importance in its effect on marketing conditions, in as much as it might be taken as a foregone conclusion that a few dollar's worth of accessories would not hold as a valid consideration one way or the other with the unbiased and intelligent purchaser of a motor car. From a more intimate view point, there appears to be more involved in the matter that at first is evident, however. And if ever a definite trend should be discovered one way or the other, there can be no question that the car market might be affected to a certain extent and the accessory market very materially in consequence.

Accompanying the introduction of the latest crop of new models from the various factories, there have been several indications pointing to a possible increase in the tendency to make the equipment more inclusive than ever before, as instanced in one case by the adoption of the catch phrase, "Nothing to buy but the license." In other quarters are found makers who are constantly becoming more and more rigid in their adherence to the principle that the purchase price of the vehicle should cover only its actual cost together with a fair margin of profit, while the manufacturer should not confuse his own interests with those of the dealer by going wholesale into the accessory business.

Theoretically, the complete equipment, when made to include all that is legitimately required for operating the car, involves a certain protection of the customer from possible misrepresentation and chicanery on the part of the agent and retailer, eliminate the possibility of virtual price-cutting on the part of the dealer who is disposed to "throw in" certain inducements in order to swing a sale now and then, and carries by inference the suggestion that the purchasers' money buys a great deal more than would be the case were the accessories left out and the price proportionately reduced—it has above all, then, a certain amount of advertising value. This latter consideration is of material importance, however, only so long as this practice is the exception rather than the rule.

Were the practice of furnishing extensive equipments to become general, it would seem that its first material effect would be upon the accessory trade; a substantial portion of the market would be transferred from the selling to the building season, orders would be closed on large contracts with stipulated deliveries, and the turnover would depend directly on the manufacturing rather than on market conditions. At the same time the dealer's position would be altered somewhat, in that his accessory sales would be confined largely to replacements and to dealings with owners of old cars who desired to improve their equipment, or to those who incline toward sumptuous trappings for the machine regardless of cost or actual requirement in the absolute sense. The ultimate tendency would be to simplify the retail selling proposition to a certain extent, place the bulk of the accessory business on the same footing as the parts industry and finally, through competition, to settle market values for complete cars. Its ultimate effect on the accessory manufacturers and on the jobbers and retailers is not, however, so easily foreseen.

Perils of the Rebuilt Car.

Always there is the peril of the persuasive mechanic, who for small remuneration is anxious to rebuild your car and give it "50 per cent." more power, or speed, or carrying capacity, or 50 per cent. more something than its maker meant it to have, and always there is the peril of the car which has passed through his hands. But never is either peril quite so imminent as during the early days of promised spring, when the owner of moderate means is tempted to "improve" his car through economy.

Whatever the type of car, and regardless of its original cost or make, this fact must be borne in mind; that its makers probably allowed no more strength in any single part than its maximum normal service seemed to require. Increasing the power, increasing the weight, or increasing the carrying capacity—which are the same thing, incidentally involve an increase in all strains, both due to load and traction, to which the parts are subjected, and the increase involves not one or two, but practically every part of the fabric. It is not that improvements are impossible to the average car, nor that it will not stand modification in a variety of ways. The point is that such alterations invariably should be made advisedly and under the supervision of a competent engineer. Otherwise the rebuilt car is a distinct and positive menace to safety and usually a wasted investment.

COMING EVENTS

March 2-7, Ormond, Fla.—Annual beach carnival, under auspices Automobile Club of America.

March 2-8, San Francisco, Cal.—California Woman's Automobile Club's show in Coliseum.

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 15-April 1, Omaha, Neb.—Omaha Automobile Dealers' Association's annual show in the Auditorium.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-24, New Haven, Conn.—New Haven Automobile Dealers' Association's show in Music Hall.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

April 24, Westchester County, N. Y.—Briarcliff trophy race for stock cars.

Suppose that several dozen men in half a dozen wagons drawn by half a dozen horses undertook a race from New York to Paris—or to Chicago, for that matter. Suppose the horses got stalled or went lame and that as a result a half dozen motor cars were fastened to the shafts and drew the wagons for mile after mile—what would the world say? Would it inspire faith in horses? In other words, is the New York-Paris circus performance proving a good advertisement for automobiles or automobiling? There are those who maintain that it would have been better had it never started.

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BOSTON BORROWS FROM JAPAN

New England Show to Have a Japanese Setting—List of Exhibitors is Long and Impressive.

Not apple blossoms but wistaria; not a New England apple orchard but a bit of old Japan, will supply the setting for the Boston show, which begins its week's run in Mechanics Building, on Saturday evening next, 6th inst.; and which like all previous Boston shows, it promises to prove a show worthy of being classed with the national exhibitions. It was Boston that set the fashion in respect to uniform decorations and each succeeding year the setting has been both distinctive and beautiful.

The decorative scheme for the forthcoming occasion will be entirely Japanese. In the grand hall the back of the stage will have a drop curtain depicting a scene in Japan, while Japanese flags will be a feature of the bunting decorations. The spaces will be separated by private hedges with bay trees at the ends next the aisles, and in the centre of the grand hall will be a large fountain with trees and flowing water. In exhibition hall also the Japanese effect will be carried out with Japanese temple arches. All through the building great quantities of wistaria and other artificial blossoms will be used to add to the Oriental atmosphere. Attendants, too, will be dressed in Japanese costume, and, for home consumption only, it is stated that the Japanese government will have representatives present to "pick up points" for automobile manufacture.

The Bostonians take a lot of very pardonable pride in their automobile show. They attend in large numbers and even those of them who do not know a spark plug from a hole in the ground enjoy their visits. They seem to consider it a sort of midwinter picnic. They sit for hours listening to the music, the while contentedly eating peanuts or popcorn. The first night always is the "great night." It is then that passes are most plentiful; and the Boston populace makes the most of them. It comes early and stays late. It lines up long before the doors are opened and once opened, the building is packed to suffocation. To the stranger, the crowd on the opening night is itself worth going far to see, wholly apart from the exhibits and the decorations.

From the trade standpoint, the Boston show always proves of importance. Although the cars are staged by the local representatives, notable absentees are not numerous and it is seldom that several new cars, or cars that have not been displayed at any other show, do not make their appearance. On Sunday night Mechanics building will contain more of the latter sort than on any previous occasion. Of 211 exhibitors, 60 of them will exhibit a total of 89 different brands of cars, of which number 12 were not seen either at the New York or Chicago exhibitions. They are as follows: Palmer & Singer, American Mercedes, De Dion, Brouhot, Stanley, Clark, Viking. Shawmut, Springfield, Stilson, Crown buggy and Bailey Electric.

In the 142 accessory exhibitors who have booked space, are included nearly all the big tire makers and producers of other appurtenances, the host of new ones being unusually large. In the climate of New England the small accessory manufacturer seems to flourish. He will be present in force and all during the week his number usually is increased by ones and twos.

The full list of exhibitors is as follows:

Automobiles.

The White Co.—White.
J. W. Maguire Co.—Great Arrow.
Thos. B. Jeffery & Co.—Rambler.
Stanley Motor Carriage Co.—Stanley.
Curtis-Hawkins Co.—Grout, Chadwick, Babcock Electric.
Geo. J. Dunham—Royal Tourist.
Winton Motor Carriage Co.—Winton.
Reed-Underhill Co.—Knox.
Corbin Motor Vehicle Co.—Corbin.
Park Square Auto Station—Berliet, Stoddard-Dayton.
Peerless Motor Car Co.—Peerless.
Fred S. Smith—Autocar, Apperson, Walter.
Geo. H. Lowe—Imperial.
J. W. Bowman Co.—Stevens-Duryea.
Mills-Kennedy Co.—Welch, Springfield.
S. R. Bailey & Co.—Bailey Electric.
Morgan B. Kent—Hotchkiss, Stearns.
W. M. Jenkins & Co.—Mitchell.
Shawmut Motor Co.—Shawmut.
Dodge Motor Vehicle Co.—Pope-Toledo, Pope-Hartford, Pope-Tribune, Pope-Waverly.
Allen-Kingston Motor Co.—Mercedes, Allen-Kingston.
F. R. Parker & Co.—Elmore.
W. A. Frederick Co.—American, Overland, Marion.
Franklin Automobile Co.—Franklin.
F. E. Wing—Marmon.
Harry Fosdick Co.—Atlas, Springfield, Baker Electric.
Locomobile Co. of America—Locomobile.
Columbia Motor Vehicle Co.—Columbia.
Maxwell-Briscoe-Boston Co.—Maxwell.
Ford Motor Co.—Ford.
Morrison-Price Co.—Rainier, Wayne, Mora.
A. T. Fuller—Packard, Cadillac.
Boston Motor Co.—Acme.
Matheson Co. of Boston—Matheson.
H. C. & C. D. Castle—Lozier.
Premier Boston Depot—Premier.
Linscott Motor Co.—National, Reo.
Edward S. Clark—Clark.
Whitten-Gilmore Co.—Thomas.
F. E. Randall Co.—Pullman, Stilson, Pennsylvania.
Algonquin Motor Car Co.—Oldsmobile. Columbus Electric.
Lane Sales Co.—Lane.
Oakland Motor Car Co.—Oakland.
South End Car Co.—Brush.
Northern Motor Car Co.—Northern.
Palmer & Singer Co.—P. & S., Simplex.
D. P. Nichols & Co.—Frayer-Miller.
K. A. Skinner—De Dion, Brouhot.
A. R. Bangs—Viking.
Ferd. F. French—Schack.
Waltham Mfg. Co.—Waltham-Orient.
Butler Motor Car Co.—Rapid, Cleveland, Pierce-Racine.
Chas. A. Eaton—Lambert.
H. C. Stratton—Kissel Kar, Car de Luxe, American Mercedes.
Dragon Motor Co.—Dragon.
The Fiat Co.—Fiat.
Renault Freres Selling Branch—Renault.
R. S. Crawford—Crawford.
Studebaker Bros. Co.—Studebaker.
Bostonia Motor Co.—Cartercar.
Crown Motor Car Co.—Glide, Crown Buggy.

Motorcycles.

Crouch Motor Co.—Crouch.
Hendee Mfg. Co.—Indian.
Light Mfg. & Foundry Co.—Light.
Ovington Motor Co.—F. N.
American Motor Co.—Marsh.
Reliance Motor Cycle Co.—Reliance.
Merkel Motor Co.—Merkel.
Reading Standard Company—R-S.
Aurora Automatic Machine Co.—Thor.

Accessories.

Diamond Rubber Co., New England Lighting Co.; Wm. Cramp & Sons Co.; Moore-Smith Co.; Norton Grinding Co., Chandler & Farquhar Co., Coates Clipper Mfg. Co., Fuller & Sullivan, American Rotary Motor Co., Judson L. Thompson Co., West & Dodge, P. A. Murray & Co., Automobile Utilities Co., Columbia Vehicle Tire & Top Co., National Valgrinock Co., Arthur S. Gunn, F. S. Suthergreen, Globe Optical Co., C. J. Downing, Underhay Oil Co., Eagle Oil & Supply Co., Dover Stamping & Mfg. Co., Maryland Casualty Co., Century Optical Co., Non-Explosive Safety Naptha Container Co., Solderine Co., Boston Auto Light Co., F. H. Howard Co., Kilgore Mfg. Co., Chas. E. Miller, Randall-Faichney Co., Dow Tire Co., Wm. Herbert Jones.

Warner Instrument Co., Never-Miss Spark Plug Co., Acetylene Co., The White & Bagley Co., Massachusetts Auto Co., Pettingell-Andrews Co., S. F. Bowser & Co., Pittsfield Spark Coil Co., Goodyear Tire & Rubber Co., Jones Speedometer Co., Gray & Davis, Veeder Mfg. Co., Fisk Rubber Co., Eastern Carbon Wks., Morgan & Wright, Columbia Lubricants Co., F. Shirley Boyd, Gordon Auto Supply Co., Parker Mfg. Co., W. S. Daniels, Gabriel Horn Mfg. Co., E. T. Ward, John A. Salman & Co., Hartford Suspension Co., Empire Tire Co.

G & J Tire Co., The Angier Co., Witherbee Igniter Co., Gilbert Mfg. Co., Atwood Mfg. Co., Firestone Tire & Rubber Co., T. F. Russell, Motor Car Specialty Co., Boston Gear Works, Vacuum Oil Co., Wm. C. Robinson Sons Co., Sage's Trunk Depot, J. Frank Cutter, John T. Stanley, Hopewell

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Bros., Gilbert & Barker Mfg. Co., Heinze Electric Co., Pennsylvania Rubber Co., N. Y. & N. J. Lubricants Co., Hartford Rubber Wks. Co., A. W. Harris Oil Co., Connecticut Tel. & Elec. Co., B. F. Goodrich Co., New England Motor Co., Leather Tire Goods Co., National Carbon Co., Ajax-Grieb Rubber Co., Westchester Appliance Co., Elite Mfg. Co., Monitor Distributor Co., Hillman Auto Supply & Mfg. Co., A. J. Wilkinson & Co., Pantasote Co., Prest-O-Lite Co., Electric Storage Battery Co., Hoffecker Co., Michelin Tire Co., Commonwealth Rubber Co., W. J. Connell, Auto Igniter Co., National Auto Accessory Co., Wm. J. Smith Co., Malden Leather Goods Co., Stackpole Battery Co., Joseph Dixon Crucible Co.

Whitney Mfg. Co., Post & Lester Co., T. Alton Bemus Co., Inc., Consolidated Optical Mfg. Co., Inc., Aetna Life Insurance Co., Albert Champion Co., Duncan Robinson, Old Corner Book Store, Voorhees Kubber Co., H. F. Campbell, Geo. A. Haws, Anderson Spark Plug Co., J. B. Draper & Co., Eco Mfg. Co., Chas. F. Kellom & Co., Wm. Nolan, Brown Folding Stool Co., R. H. Smith Mfg. Co., Boston Auto Gage Co., Proctor Supply Co., J. W. Colgan Co., F. P. Speare, Y. M. C. A. Automobile School, Nonpariel Brass Co., Ciglia Shock Preventer Co., Zeiglan Bullet Proof Cloth Co., Ball Bearing Tire Co., Baldwin & Co., Melrose Automobile Co., St. John Rubber Co., Auto List Publishing Co., The Defiance Chain Co., Shove & Gage Co., Inc., Walden Mfg. Co., Alfred Cutler Morse, Duplex Coil Co., Legnard Bros. Co., Vim Motor Co., Worcester Pressed Steel Co., F. R. Parker & Co., Lowney Co., L. E. Bova, John A. Mason, Visor Knitting Co., National Auto Top Co., E. B. Badger & Son, Hull & MacArthur, H. Snowden, Wood Carving Machine Co., Wood Piano Co., J. D. Coward, Hess-Bright Mfg. Co., H. H. Lynn, Park Square Auto Station, T. C. & W. L. Frye.

Engineers' Society to Meet in Boston.

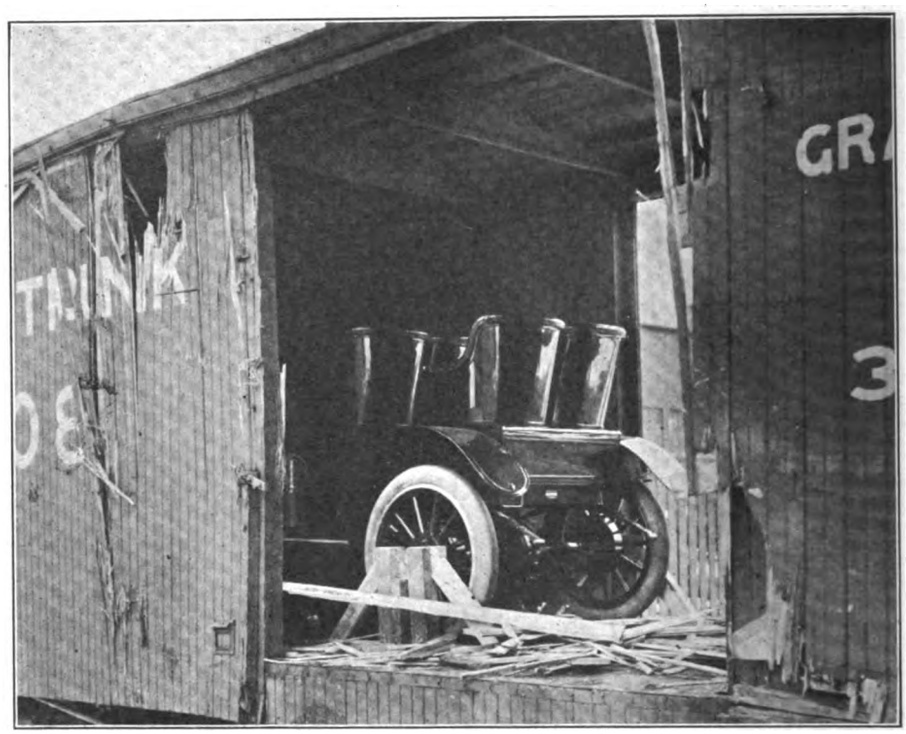
The regular quarterly meeting of the Society of Automobile Engineers will be held in Boston, during the course of the show there. It will be opened on Tuesday evening, 10th inst., by the reading of a paper on electrical ignition, by J. O. Heinze, at the Massachusetts Institute of Technology. The following morning at 9.30 a visit of inspection will be paid to the laboratory and factory of the Heinze Electrical Co. In the evening a dinner will be held at the headquarters of the Bay State Automobile Association, and this will be followed by the regular meeting and the reading of papers.

Among the subjects to be dealt with are "Perfecting Automobile Ignition," by J. O. Heinze; "Design of Automobile Crankshafts," by P. M. Heldt; "Heavy Goods Transportation Systems," by Joseph A. Anglada; "Automobile Forgings," by Richard W. Funk, and "A Year's Use of Denatured Alcohol," by Thomas L. White.

IMMUNE IN A RAILWAY WRECK

Runabout Uninjured Though Car Carrying It was Shattered—Value of Careful Loading. Strikingly Illustrated.

When an automobile in a freight car goes through a railway wreck without getting hurt, while the car in which it was loaded was badly smashed, it speaks well for the automobile and the manner in which it was loaded. For the science of loading cars for shipment is a fine are which has been developed to its present state only after many costly exprimnts.



FRANKLIN CAR THAT DEFIED WRECK

A Franklin 28 horsepower runabout which left the factory at Syracuse last Saturday in a box car, over the D., L. & W., bound for Baltimore, suffered an experience of the sort. At Messengerville, N. Y., not far from Binghampton, the axle of one of the freight cars broke and all of the following cars in the train were thrown off the track. The car in which the Franklin was shipped bumped up against a string of freight cars on one side and then caromed across the track and collided with a house on the other side. The force of the impact drove a large section of weather boarding right through the end of the car, tearing a great hole in its side.

A 4x4 oak door casing on the car was splintered, three oil boxings were smashed and a truss rod pulled all out of shape. In spite of all this rough handling, however, the Franklin motor car came through without a scratch, as shown in the accompanying photograph. The automobile was not even jerked from its blocks notwithstanding the tremendous shock when the car hit the house. The runabout was removed from the freight car and forwarded to the purchaser in Baltimore.

Packard Designs a New Body.

Th Packard Motor Car Co. have brought out what they term a close-coupled body, which is a compromise on the touring car and the runabout. At first glance it differs not at all from the form of a five passenger body, save that it is slightly more compact and that it is fitted with a rumble seat. The design of the body aims to so bring and distribute the weight of the passengers between the front and rear springs, that a light load or a heavy one will not make much difference in the comfort obtainable.

Supplementary Spiral Spring Moves.

The Supplementary Spiral Spring Co., of St. Louis, manufacturers of the supplementary spring, have removed their New York office from 52 W. Sixty-seventh street, to the Motor Mart, 1876 Broadway. M. H. Cormack, formerly vice-president of the Standard Brake Co., is in charge of the office, his territory including the States of New York and New Jersey.

Mercedes Repudiates Sisterhood of Maja.

Although the Maja car was heralded in this country as "the sister of Mercedes," not all the members of the family seem convinced of the truth of the assertion. The new American representatives of the Mercedes has "no sisters, brothers, cousins, uncles or aunts."

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THE LETTER TO LOUGHBOROUGH

Task of Carrying the Message to Fort Leavenworth Nearly Completed—"Gumbo" Worse than Snow.

After making a truly remarkable run half way across the American continent, the Studebaker car which is carrying a message to Loughborough—that is, to Colonel Robert H. R. Loughborough, in command at Fort Leavenworth, Kan., from General F. D. Grant, commander at Governor's Island, N. Y., was almost stalled while practically in sight of its destination. Snow drifts that were encountered east of Chicago could be dug through, but the Kansas mud—"gumbo", they call it—proved an anchor almost too great for the 30 horsepower car to pull against. Late last night it was reported nearing Atchison, and making pregress slowly through two and three feet of mud, while fifty automobiles are waiting to escort the army dispatch car into Fort Leavenworth if it reaches Atchison this morning (Thursday).

Record-breaking in the summer time when there is nothing to watch but the road may contain many elements of excitement, but it is as nothing compared to a winter ride, with snow drifts, slush, mud and other dangerous things to buck against. There is no doubt but that the Studebaker's ride from New York City to near Fort Leavenworth, Kan., has been eventful and replete with "incidents."

As has been detailed in the Motor World the car left New York on Tuesday, the 18th ult., six days after the New York-Paris "tourists" left, and following in their trail proceeded up the Hudson river to Albany. Beyond Albany the roads were found to be in terrible condition and the tow path along the Erie canal was taken, as offering the least resistance. The first real thrill came when the car ran suddenly on a large patch of ice and shunted off the tow path in the canal. Fortunately the ice was strong enough to hold the car and a gang of Italian laborers helped push it back on the tow path.

Buffalo was reached on Thursday, 20th ult., and the car was driven up to Fort Porter to secure the signature of Captain Lafitte. Cleveland, Toledo and Michigan City were the next large cities visited, the latter place being reached on Tuesday, the 25th. The run from Michigan City to Chicago was accomplished that afternoon, the Studebaker having passed every car in the New York-Paris run. It might be added, however, that the Studebaker was driven night and day with alternate crews.

From New York to Chicago the car had been digging through snow drifts, and although much of the snow was left behind the Windy City it wasn't a circumstance to the sticky, clinging mud, hub deep, that it had to wallow through in Iowa, Nebraska and Kansas, after making a good run across Illinois in one day. Bad as the conditions were the car reached Omaha at 5 p. m. Sunday, 1st inst., and after a night's rest the tired crew started on the last lap down the westerly side of the Missouri river. It passed through Greenwood, Neb., at 11 a. m. Monday morning and then began the battle with Kansas mud. Detailed reports are lacking, but telegraphic reports show that the car is practically fighting its way through two feet of mud, literally foot by foot. It is expected to reach Fort Leavenworth some time this morning.



PICTURESQUE BUT STRENUOUS INCIDENT OF CARRYING THE MESSAGE TO LOUGHBOROUGH

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DATE FIXED FOR GLIDDEN TOUR

A. A. A. Touring Board Selects Buffalo for Starting Point—Victor Breyer to Represent Association Abroad.

This year's Glidden Tour will start from Buffalo, N. Y., on Wednesday, July 8th. Positive announcement of this fact was made by Frank B. Hower, chairman of the touring board, at the meeting of the board of directors of the American Automobile Association held in New York City, Tuesday morning, 3d inst.

The announcement was not unexpected as Chairman Hower several weeks ago had semi-officially stated that this date would probably be decided upon by the directors. The announcement of Tuesday followed an official adoption of the date. July 8th was selected as the most propitious time for starting such a tour and as the roads and legislative convention is to be held in Buffalo on Monday and Tuesday, July 6th and 7th, it was considered appropriate that the annual tour should start on the day following. All the affiliated clubs within touring distance of Buffalo will be asked to promote runs to finish in Buffalo on July 5th and to attend the good roads convention.

Neither the rules for nor the itinerary of the annual Glidden Tour have yet been announced, but Chairman Hower stated that he is at work upon both. The route selected will probably take in Cleveland, Pittsburg, Baltimore, Philadelphia, New York City and Boston, with a termination in the White Mountains.

Most of the work transacted at Tuesday's meeting was routine, but the interesting announcement was made that the Association has secured the services of Victor Breyer, of Paris, who managed the Grand Prix race last year, to act as the Association's European touring consul for the present year. Members desiring to tour abroad may rent cars, employ chauffeurs, or obtain any information they desire through Mr. Breyer without charge to them. Breyer is an Englishman by birth, but has lived in France all his life and as he is considered one of the best informed sporting men in Europe his services should be of real benefit. Breyer also acts as the European representative of the National Cycling Association of this country.

Applications for membership were received from the Automobile Club of Vermont, which comprises in its membership several clubs in that State, as a State association, and from the West Virginia State Automobile Association, as well as from several individuals, and the applications were favorably received. This makes five State associations admitted since the annual meeting in January, the others being the Delaware Automobile Association, the Automobile Club of Hawaii, and the California State Automobile Association. Twenty-one State associations now are affiliated.

President W. H. Hotchkiss presided at the meeting, the other directors in attendance being George E. Farrington, treasurer; F. H. Elliott, secretary; J. D. Thompson, chairman of the racing board; Frank B. Hower, chairman of the touring board; Robert F. Hooper, chairman of the good roads board; Lewis R. Speare, of Boston; Edward Kneeland, of Pittsburg; S. L. Haynes, Springfield; Paul C. Wolff, Pittsburg; Isaac Starr, Jr., Philadelphia; George A. Post, Paterson, N. J.; John P. Coghlin, Worcester, Mass., and Giles H. Stilwell, Syracuse, N. Y.

Many Duties for Few Dollars.

The question as to the relative importance of the chauffeur in the staff of household servants may still be debatable on this side of the pond, but in England it seems to have been settled by one family, a clergyman and his wife, who have very clear ideas of the duties of the man who may be engaged to drive them about. That their prospective employe might thoroughly understand what would be required of him, the following rules and regulations were compiled by the good wife and submitted to each applicant as he appeared at their little home in the suburbs:

Motor driver's duties.—Be at the rectory from 6.30 a. m. till 7 at night; take entire charge of the car and clean and polish it; manage the pony; milk the cow; feed the chickens, pig, etc.; clean the boots and knives; mow the lawn and garden; no meals here; touch his hat to us; ride a bicycle, must work on Sundays, and wear decent clothes and a billycock hat.

The salary was $5 per week.

Taber Wins Trophy a Second Time.

By winning the annual hill climb of the Corona Automobile Club at Corona, Cal., February 22d, A. L. Taber further established his claim on the challenge cup offered by the club to the driver winning the annual climb three times. As Taber made the fastest time at last year's meet he will have to win once more to secure the trophy permanently. The day was ideal for the event and although only five cars made the ascent all Corona was out to witness the affair. The distance was 3.1 miles, with a grade of from four to eight per cent. The cars finished in the following order: A. L. Taber, Wayne, 5:43; W. C. Barth, Tourist, 8:32;A. L. Taber, Oldsmobile, 8:52; Charles Allen, Buick, 9:05, and Tom McGuire, Oldmobile, 12:15.

Automobile Road Planned by Texans.

Texas automobilists are planning to construct an automobile road between Fort Worth and Dallas, with the aid of the highway commissioners. Should the road be built a midway clubhouse will be established at Arlington.

NEW YORK CARNIVAL PROGRAM

Big Parade Planned as the Chief Feature—One Section to Exemplify History of the Automobile.

The New York Automobile Trade Association finally has definitely decided on the chief features of the program for "carnival week," April 6th to 11th. The suggested day parade, open to all comers and in which it was thought one thousand cars might be in line, has been abandoned. Instead, the semi-historical parade, which first was proposed, will be carried out and will occur Tuesday night, April 7th. Some explorer having discovered that automobiles first were introduced into New York City ten years ago, that discovery will supply the peg on which the celebration will be hung, in other words, it will mark the tenth anniversary of the introduction of automobiles into New York City.

R. G. Howell will be grand marshal of the parade, which will comprise four divisions. The first division will be made up of cars made in 1903 and earlier. It is planned to make this division a moving exposition of the development of the automobile from its beginnings down to the time when it may be said to have become standardized. The carnival managers will make efforts to have all of the famous racing cars that have made history in races for the Vanderbilt and Bennett cups and that now are in this country in the historical section of the parade. The stock cars that have been entered for the Briarcliff trophy race in Westchester county on April 24 will also be eligible for places in the first division.

The second division will be reserved for the dealers and will be subdivided into three sections, for the steam, gasolene and electric types of cars, respectively. The third division will be open to all automobile owners and will be the decorated section. Owners who put their cars in this section will be requested to decorate them and two prizes will be offered for the two cars that are most beautifully decorated. There will also be a prize for the car having the most unusual decorations. The fourth division will be open to commercial vehicles.

On Thursday, April 9, there will be a hill climbing contest on some grade not yet selected. The stores along Automobile Row will keep open house during the week.

The Federal Bill Considered Too Drastic.

Considering the proposed national automobile law too drastic in some of its provisions, Congressman Gillett of Massachusetts will endeavor to amend the bill. One of the objectionable provisions would make a person violating the law ineligible for reregistration within five years. This is an entirely friendly proceeding on Mr. Gillett's part, inspired by the Springfield Club.

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LESS THAN THREE MILLS PER MILE

Per Capita Cost of Travel in Long Island Economy Run—Knepper Receives the Award of Honor.

That traveling in automobiles over frozen roads is more economical than in railway cars was proven beyond a doubt by the 242 miles economy run over Long Island roads Tuesday of last week, 25th ult., conducted by the Long Island Automobile Club, the tabulated results of which were made public on Friday last.

As told in last week's Motor World, 23 cars started in the run, all but four of which finished. After considerable mental effort the technical committee of the Brooklyn organization arrived at the results, which show that the winner was H. K. Knepper, who drove a Frayer-Miller car. On the run Knepper's car consumed exactly 13 gallons of gasolene and used 1 quart ½ pint of oil, which, on a basis of 25 cents and $1.00 per gallon, respectively, made the total cost $3.56. There were five passengers in the car, the cost per passenger being 71⅕ cents. As the railroad fare for the same trip from Brooklyn to Amagansett and return is $5.28, the comparison is obvious.

Honors were closely contested, R. A. Vail, Franklin, finishing second, with a per capita cost of 71½ cents. Vail used 9.875 gallons of gasolene and 2.5 quarts of oil, but as he carried one passenger less than Knepper, the cost per passenger was thereby increased. Third prize went to Robert Morton, who drove a Pullman. His total cost for five passengers was $3.91, making an average of 78⅕ cents. There was only one cent's difference between the next two finishers, I. C. Kirkham's Maxwell scoring 79⅗ cents per passenger, while the per capita cost for C. G. Arnold's Pope-Hartford was 80⅕ cents. The cost per mile for each person on Knepper's car was something less than three mills. The full scores are given in the subjoined table:



H. K. KNEPPER, FRAYER-MILLER, WINNER IN ECONOMY RUN

Driver and Car.	Gasolene (gals.)	Oil (qts.)	Total cost.	Passengers.	Cost a passenger.
H. K. Knepper, Frayer-Miller	13.000	1.25	$3.56	5	$0.71⅕
R. A. Vail, Franklin	9.875	2.50	3.10	4	.77½
Robert Morton, Pullman	13.125	2.50	3.91	5	.78⅕
I. C. Kirkham, Maxwell	14.937	1.00	3.98	5	.79⅗
C. G. Arnold, Pope-Hartford	14.000	2.12	4.03	5	.80⅕
M. A. Martin, American Mors	21.125	4.62	6.44	7	.92
Philip Hines, Pope-Hartford	14.875	4.50	4.85	5	.97
C. A. Carlson, Winton*	26.375	0.87	6.82	7	.97 3-10
W. Walton, Acme	25.50	2.00	6.88	7	.98 2-7
W. A. Bowers, Thomas-Detroit	15.218	4.50	4.93	5	.98⅗
D. C. Teeter, Rambler	15.937	3.12	5.01	5	1.00⅕
J. W. Mears, Acme*	24.878	3.50	7.10	7	1.01 3-7
H. Minchenor, Lozier	27.775	4.50	8.07	7	1.15 2-7
C. Hosley, Maxwell	22.50	1.50	6.00	5	1.20
James D. Rourk, Cadillac	18.25	5.75	6.00	4	1.50
W. Birdsall, Mora	16.000	4.12	5.03	3	1.67⅔
John Holm, Studebaker	27.75	6.37	8.53	5	1.70⅗
Kingsley Swan, Stevens-Duryea*	29.50	5.62	8.78	5	1.75⅗
W. A. Flinn, Acme*	30.375	3.75	8.53	4	2.13¼

* Six cylinders.

TAME SPORT ON ORMOND BEACH

"Crippled" Entrants Reduce the Already Thin Fields—Large Crowd Sees Series of Uninteresting Runaways.

It looks very much as if the Ormond beach speed carnival had "shot its bolt." Indications to that effect which were apparent last year, are multiplied on the present occasion. Not even the proud name of the Automobile Club of America, which this year is standing as the sponsor of the carnival, has served to help. Outside of Florida, interest scarcely has been lukewarm. Spectators and entries both have been hard to attract. The carnival was to have been inaugurated on Monday last, but as several of the few entrants had not arrived, the opening events were postponed until Tuesday, and then, although the weather was all that could be desired and the crowd considerably larger than has yet attended an opening day, the sport was flukey and disappointing.

The beach was far from its usual good condition and the fact that both races—the 100 miles for the Minneapolis trophy and the 160 miles for stock cars, which was reduced to 150 miles, proved uninteresting runaways, to say nothing of there being several scratches in each event and only two cars in each running at the finish, did not serve to put the crowd in very good humor. In the 100 miles race the time was more than a half-hour slower than the record, and although a record was claimed in the 150 miles event for stock cars, for the reason that it was the first race ever held on the Florida beach at a longer distance than 100 miles, the time made in it was not startling, and is far from representative of the speed that can and has been obtained on the tide washed strip of beach.

As a large grandstand had been erected in front of the club house at Daytona, which was comfortably filled with persons who had paid fancy prices to witness uninteresting runaways, both races were started from that point. Neither of the expected loops at each end of the course had been built, and as the course laid out for Tuesday's races was only 12½ miles in length, numerous turns were necessitated.

The start of the 100 miles race for the Minneapolis trophy was not encouraging. Of the six original entries three had to be withdrawn. The Renault was out because of a broken oil pipe and the Haynes had been withdrawn with a broken crankshaft, it was stated, while the B. L. M. was said to have tire trouble. Therefore only three cars started, the 60 horsepower Fiat, with Cedrino at the wheel; the front drive Christie, driven by H. W. Blakeley, and a 120 horsepower Hotchkiss, in charge of H. B. Shefts.

Although Shefts was the first off the mark

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Cedrino overhauled him before 100 yards and was soon out of sight, while Shefts laid up inside of the first mile with tire trouble. The Christie car made the first turn all right, but stopped shortly after with a broken valve. When Cedrino came up to the grandstand after the first turn one of the front tires was missing and he stopped some time to replace a stop on a pet cock. It was not until after he had returned that he replaced the tire. No sooner had he got under way again than the tire ripped off, and this time he was delayed 20 minutes. His time for 20 miles was 15:37, and for 25 miles, 26:39, while Shefts covered the same distance in 47:28. At the 50 mile mark Cedrino had gained a big lead, his time being 1:04:05, while Sheft's was 1:17:51. It was simply a runaway for Cedrino, and although he drove most of the distance on three tires and about half of the way on two tires, he was never in danger of being overtaken by Shefts. Cedrino finished the 100 miles in 1:50:20, which is 34 minutes 40 seconds slower than the record for the distance, made by Walter Clifford-Earp in 1906. When Cedrino finished Shefts was at the 75 miles post, but no time was taken.

Four starters lined up for the 160 miles race for stock cars—which was reduced to 150 miles—as follows: E. W. Howard, 45 horsepower Allen-Kingston; J. Hunsley, 45 horsepower Cleveland; Louis Bergdoll, 60 horsepower Benz; and J. Carey, 60 horsepower Thomas. Bergdoll got away first at the start and led by a good margin at the 25 miles stake in 25:15, with the Thomas second and the Cleveland third. The Allen-Kingston melted a bearing early in the race and was withdrawn. Bergdoll reached the 50 miles post in 1 hour 1 minute 2 seconds. Carey had withdrawn and the Cleveland passed the half century mark at 1:17:27. One hundred miles was reached by Bergdoll in 1:47:31. Bergdoll continued in the lead until the finish, the time for 150 miles being 2:40:53. Hunsley was on the last stretch when Bergdoll finished. The summaries:

One hundred miles for Minneapolis trophy—Won by Emmanuel Cedrino, 60 Fiat; second, H. B. Shefts, 120 Hotchkiss. Time, 1:50:20.

One hundred fifty miles for stock cars—Won by Louis Bergdoll, 60 Benz; second, J. Hunsley, 45 Cleveland. Time, 2:40:53.

If Tuesday's racing was a disappointment that on Wednesday was even tamer. The only event decided was the 125 miles event for the so-called "gentlemen amateurs," which resulted in a runaway after half the distance had been covered, for Louis Bergdoll, a Philadelphia dealer. As the existing A. A. A. rule classifies every one engaged in the automobile trade as professionals, how Bergdoll qualified as an amateur is past understanding. Three cars started and two finished the race. Before the race there was considerable comment regarding the weight of the Benz, which tipped the scales at about 300 pounds over the international limit. By agreement the objection was waived and the car was permitted to start.

Two fires were the only occurrences to relives the day's monotony. Joe M. Gilbert, of Continental tire reputation, had decided to become a racing man for the occasion, and had entered his Packard car for the amateur event. Gilbert was tuning up his car before the race, when a short circuit started a small blaze. A bystander picked up what he supposed was a can of water and doused the burning car with it. Unfortunately it proved to be gasolene instead of water. Needless to add, Gilbert did not become a race driver. Quick work with fire extinguishers and sand prevented the total demolition of the car, but it was rendered unfit for racing.

A few hours later Harry Levey's big Hotchkiss gave an exhibition of fireworks on the beach opposite the judges' stand, and the officials had a chance to play volunteer firemen. The car was put out of commission for the time being. Crippled cars seem to be playing a prominent part in the meet. The Haynes was put out of the running before the meet commenced and all efforts to get the B. L. M. car that was constructed for the Vanderbilt race, but which did not start, into commission have proved futile. Latest reports state that the transmission is askew. Paul LaCroix's Renault has a broken oil pipe, which it is expected may be replaced in time for the car to participate in to-day's race.

The beach was in better condition than on Tuesday, and faster time resulted. The race for "gentlemen amateurs" originally had been scheduled for 128 miles, but as the course had been reduced to 12½ miles instead of 16 miles, as was first intended, the event was made 125 miles to conform with the change.

There were only three starters—Bergdoll in the Benz, S. B. Stevens in the Fiat, and R. G. Kelsey in the Christie. Bergdoll got off the mark first, but was soon passed by Stevens, the latter reaching the club house after the first turn, more than a mile ahead of the other two. His time for 25 miles was 20:40. Bergdoll covered the distance in 22:54, and Kelsey in 37:07. Stevens also led at the 50 mile post in 41:37, with Bergdoll second in 46:41. In the next 25 miles misfortune overtook Stevens, in the shape of a broken rocker arm on the engine of the Fiat. A touring car was dispatched for another part, but half an hour was lost before Stevens got going again. The Christie car had in the meantime developed engine trouble and retired. Bergdoll kept plugging along and finished 75 miles in 1:07:49, 100 miles in 1:30:35, and completed the distance in 1:53:30⅕. Stevens had covered 95 miles in 1:54:28 when Bergdoll crossed the finishing line. The summary:

One hundred and twenty-five miles for gentleman amateurs—Won by Louis Bergdoll, 60 horsepower Benz. Time, 1:53:30⅕. Also ran—S. B. Stevens, 60 horsepower Fiat, and R. G. Kelsey, 50 horsepower Christie.

Object Lessons for Farmer Solons.

The committee on agriculture of the House of Representatives of the State legislature of Kentucky was "joy riding" last week. Unlike most "joy riders" the agricultural committeemen are not grafting rides by false pretences. Quite the opposite is the case, for they are being importuned to take rides around the State in cars furnished by members of the Automobile Club of Louisville.

In the language of one of the automobile club's legislative committee, the State legislators are being "shown not the way an auto ought to auto, but how an auto does auto."

In other words, in an endeavor to kill a bill introduced recently by Representative "Windy Bill" Thompson, which is now in the hands of the committee on agriculture, is responsible for the demonstration to these members. They will be shown that a rate of ten miles per hour on a flat level country is absurd and that a $50 to $500 fine for an offense is an outrage.

The bill introduced by Representative Thompson amends Section 1 of the present law to read, a maximum speed of ten instead of fifteen miles per hour, and increases the fine for infraction from $10 to $100 to from $50 to $500.

Naturally, the automobilists object to this clause, and it is by actual speedometer tests that they hope to impress upon legislators the real meaning of the proposed "ten-mile limit."

Postmaster Morgan Favors Motor Mail Ca.

Prospects of the ultimate adoption of motor vehicles in the United States Postal Service to a uniform degree, are constantly growing brighter. At the annual meeting of the New York State Association of Postmasters, held in New York City this week, Postmaster Morgan of the New York postoffice, gave his personal endorsement of the motor car, and suggested its use as a solution of one of the present dilemmas of the department, which arises from the difficulty of securing prompt deliveries of periodical mail in the residence sections of the city.

"There is one class of mail matter," he said, "that should not be neglected, and that cannot be neglected without serious complaint. That is the class which includes the newspapers and periodicals. As we deliver that mail now we have to depend upon wagons. It is my opinion that automobiles should be used. Whether the automobile can be relied on for this service will be up to the department at Washington, but I believe that the automobile has reached a point of service that warrants its test as a factor in the postal service of the United States."

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ROBERTS ARRIVES AT OMAHA

American Leader in New York-Paris "Race" Encounters a Protest—Rumor of Possible Change in Route.

Just what the so-called New York-Paris automobile "race" will develop into is shrouded in beautiful uncertainty. Many conflicting reports as to suggested changes in the route have been flying rampant during the past week, but it is evident that the cars mean to travel overland as far as San Francisco, at any rate. This conclusion is strengthened by the fact that when the leading Thomas car arrived in Omaha shortly before noon yesterday (Wednesday), preparations were made to resume the run to Cheyenne, this morning. Montague Roberts, the driver of the Thomas car, announced that he would pilot the car only as far as Cheyenne, Wyo., when it would be turned over to George Schuster, who has been with him throughout the trip, and to Captain Charles Hansen, the Arctic explorer, who forsook the French De Dion car after a disagreement with St. Chaffray, the driver.

Roberts got a great reception when he reached Omaha. It was, according to reports, the biggest demonstration that has been made since the cars left New York City on February 12th. The council allowed the fire whistles to be blown in honor of the American contestants, while the whole town took a holiday to view the mud-covered American car. The Italian Zust car had reached Vail, Iowa, last night, at 6.45, after a run of 89 miles through the mud. The French De Dion is still at Cedar Rapids with a breakdown, while the Prothos and Motobloc have gotten as far as Chicago.

If the Indiana snow drifts through which the cars had to be dug and pulled through was disheartening, it was at least clean, which same cannot be said of the gumbo mud that they had to wallow through after leaving Chicago, especially in Iowa. As told in last week's Motor World the leading Thomas car reached Chicago on Tuesday afternoon, followed on Wednesday by the French De Dion and the Italian Zust cars. After being wined and dined, and then all over again, Roberts left Chicago on Friday morning, 28th ult. The French and Italian crews did not have their fill of hospitality as dispensed by the Chicago motorists so they remained until Saturday morning in the Windy City.

Before leaving Chicago, however, the foreigners sprung a surprise in the shape of a protest against the Thomas car and Roberts. Among the things they claimed was that the Thomas had been materially changed while at Buffalo; that the car was towed many times, in one instance, between South Bend and Michigan City—the motor remaining stopped for two days, and the cooler removed while horses pulled the car; that the car was towed by a trolley car at one point; that the car used the railroad tracks and that it was put on sledges at certain points. The protest was signed by St. Chaffrey of the De Dion, Sirtori of the Zust, and five others. E. R. Thomas denied the first allegation, stating that the only thing changed on the Thomas car at Buffalo was the substitution of a larger gasolene tank, taking off the fenders and one of the bucket seats at the rear. Roberts issued a general denial of the other charges and said that the belated protest of the French and Italian drivers was a case of "sour grapes." He said that at no time did the motor stop running, that the car was not towed by a trolley; that it did use the railroad tracks at one time and was pulled through many drifts, but so were the other cars.

Roberts entered Iowa on Saturday and stopped at Clarence, while St. Chaffray and Sirtori got as far as Rochelle, Ill., Roberts's stopping place the night before. Dissension arose in the De Dion car before it left Chicago. St. Chaffray and Capt. Charles Hansen, the Arctic explorer, had some words and the latter left, declaring that he would take a car through to Paris anyway. Hansen's place was taken by Emanual Lescares, a Chicago Frenchman. Roberts did not lay off over Sunday but continued to Belle Plains, Iowa, 1297 miles from New York. The De Dion and the Zust kept together to Calmus. All the cars had to plough through deep mud, and naturally the going was slow. Sunday night the German Protos was reported at Chesterton, Ind., and the Motobloc at Michigan City. After eleven hours of running through deep mud Roberts succeeded in getting the Thomas car to Ogden, Iowa, on Monday night of this week, 2d inst. The Zust and De Dion cars were reported at Cedar Rapids, 132 miles behind, while a broken steering knuckle caused the Protos to stop at Chestertown, Ind., thus enabling the Motobloc to overhaul it at that place.

Another shift in positions was made on Tuesday, when the De Dion broke a spring and injured its steering gear so that it was obliged to wait at Cedar Rapids for repairs. The Zust pushed on through the trail of mud that the Thomas had left behind and got as far as Ames, 1,369 miles, that night. Roberts reported that the mud he encountered after leaving Ogden was the worst yet, but notwithstanding he managed to get as far as Logan, 1,502 miles from New York, and only 34 miles from Omaha. It also was announced on the same day that Captain Hansen had concluded arrangements with the Thomas company and would become a member of the Thomas crew at Omaha. The accident to the Protos car required it to remain idle all day at Chesterton, Ind., while the Motobloc, which up to that time had assiduously held up the rear end of the procession, passed the Protos, and chugged triumphantly into Chicago, 1,043 miles, having been twenty-one days on the road from New York. It is indeed a great automobile "race!"

There seems to be some doubt as to the future route of the contestants. It has been reported from several sources that unless the cars reached San Francisco by March 8th they would not be able to take the boat for Valdez, Alaska. Inquiry of the New York Times, failed to disclose anything definite, except that a meeting to determine the future course, probably will be held within a day or so. Another report has it that the cars will proceed overland to San Francisco, thence taking the train for Seattle, overtaking the boat there.

Non-Stop Run of 440 Hours.

After running uninterruptedly for 440 hours and 50 minutes the 28 horsepower Franklin motor car with which the Sid Black Auto Co. of Cincinnati, had been making a non-stop run, was stopped last Saturday afternoon, 29th ult.

The engine was running smoothly at the time and there was every reason to expect that the motor would continue indefinitely. One of the employes of the Black company, however, in trying to reverse the machine in the street, pulled on the emergency brake lever, set the brakes, and then threw the clutch in, stalling the engine. A minute thereafter, the engine was restarted and the car driven into the garage, the test coming to an end.

The engine was first started Tuesday, February 11, the non-stop run including actual road work each day, and idle running in the garage at night. The daily road runs averaged between 250 and 300 miles. On three successive days the car was driven to Columbus and return via Dayton and Springfield, a distance of over 250 miles. On other days it went to Indianapolis and back, to Lexington and return and to various other cities in Ohio, Indiana and Kentucky within a radius of 100 miles of Cincinnati.

Careful records were kept of the road mileage of the car, which amounted to 3,300 miles, and of the amount of gasolene consumed, which averaged about 25 gallons per day. The oil consumption was about 2¼ gallons per day. All repairs such as the replacing of one or two valve springs, putting on tires and even replacing a bearing, were made without stopping the engine. During the entire run no trouble with the engine was experienced.

Time to Overhaul the Car.

It should be borne in mind that a car which has been subjected to any great amount of use in deep snow usually requires a thorough overhauling before it is perfectly fit for summer service. The inspection incident to this overhauling should invariably include the spring mountings, steering gear, and all bolts on frame and running gear, which may have been shaken loose by the unusual strain of the winter use.

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ELMORE RUSHING OUT TAXICABS

All the Present Output Booked for Chicago for Service There—Specifications of the Vehicle.

Elmore taxicabs are now being shipped from the Elmore factory as rapidly as they can be assembled. For the present the entire output is being sent to Chicago, where Mr. Owen H. Fay intends to install a taxicab service.

These taxicabs are of the same construction as the Elmore Thirty, which is the three cylinder, two cycle valveless car built by the Elmore Mfg. Co. The cab is an exceedingly light one, weighing less than 2,300 pounds. The engine develops 24 horsepower and is geared 3½ to 1, so that a speed of from 4 to 30 miles an hour is easily obtained.



THE ELMORE TWO-CYCLE THREE-CYLINDER TAXICAB

The inside height of the body is 60 inches and the inside width is 40 inches. From the front seat to the back cushion is 45 inches. The door is 22 inches wide and 54 inches high. The distance between the back of the front seat and the front of the rear seat is 27 inches and the extreme height of the body from the ground is 90 inches. Three people can be very conveniently handled in the cab, while two people have plenty of room and to spare.

The upholstering is furnished either in plain or in biscuit pattern, in either cloth or leather. Best quality of both covering material and curled hair is used. The cushions are all extra length and are built on the best quality of oil tempered springs, and like the rest of the inside are furnished in blue. Arm straps are also supplied. The doors are operated by inside latches, and both the front and the door windows are of the drop pattern manipulated from the inside. The regular color of the Elmore taxicab is dark green with a light red stripe.

The only other difference between this taxicab and the regular stock chassis is that the wheel base has been shortened so that in the taxicab it is 102 inches. This makes the car very easy to handle and it can be turned around in the average street without having to back. In the Elmore cab, which is here illustrated, the two men responsible for it, J. H. and B. A. Becker, are seated.

Official Inspection for Taximeters.

A natural consequence of the general introduction of taximeters into the motor-cab traffic of London, is the questioning of their accuracy. Failing of success in pinning the charge of dishonesty onto the coats of the drivers, the insistent public has proclaimed the dishonesty of the instruments themselves until now it has been decided that all licensed cabs must carry taximeters which have been officially inspected and sealed. The ruling which carries this clause has recently gone into effect, and a time-limit of three months has been allowed to permit the inspection of all instruments in present use. After the middle of May every taximeter in London, must bear the seal of the Physical Laboratory at Kew.

It is possible to straighten up a sagging live axle by taking up the truss rods, if such are provided, or if not, to install one or more pairs on the under side. Care should be taken in doing this, however, not to throw too great a strain on the trusses, as it is possible to bring nearly the entire load upon them, and give them more work than they are capable of fulfilling properly.

CONTRACTS INVALIDATED BY TIPS

Far Reaching Court Decision Involving the Question of Commissions Paid to Employes Making Purchases.

While the question of paying commissions to chauffeurs has been commented on from time to time, it has always been treated from the ethical standpoint and little or no attention paid to the legal phases which may be involved. A recent decision of the Appellate Division of the Supreme Court of New York State establishes an important precedent, not alone for this State, but for many others which have passed laws dealing with the subject of commissions.

On February 14, 1908, the above court, to which the case had been carried on appeal by the plaintiff, who had lost in the two lower courts, rendered a decision sustaining the judgment against the plaintiff.

The decision was in the matter of a manufacturer who sued a jobber for $1.555 due for goods ordered and accepted by the jobber, who admitted these facts. As a defense the jobber set forth that one of his employers—the buyer—had accepted from the manufacturer the sum of $75, being approximately a 5 per cent. tip or commission, in violation of the Saxe Anti-Tipping law passed by the legislature in 1905, which makes it a misdemeanor to offer a gift, bribe or commission, discount or bonus to an agent, employe or servant with intention to influence his action in relation to his principal's, employer's, or master's business. Fines or imprisonment or both, are provided as penalties.

In the case before them, the justices of the Appellant Division held that the contract was void and unenforcible because of the manufacturer's act in bribing a purchasing agent of the jobber to the end that the latter should buy the goods of the former. The decision contained the statement that a contract secured by fraud and criminal acts is void and unenforcible for that reason alone. This carried with it the unusual decision that the principal could accept and use the goods obtained and yet refuse to pay for them on the ground that the seller had been guilty of an illegal act, and one that was contrary to public policy, in inducing the sale.

The result of this decision of the highest tribunal will be far reaching, and if one or two of the cut rate, second hand dealers, who are successful in securing the patronage of a certain class of chauffeurs because of the commissions which they pay to them, find that their bills are outlawed by the very act with which they succeeded in getting the business, they will probably yell loud and long and then, perhaps, fold their tents and quietly sneak away under cover of darkness.

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MODULATING SOUND TO SAVE WEAR

Startling Theory of the Relation of Noise to the Life of Parts—Its Application to Car Design.

Nothing could seem more absurd from the utilitarian point of view than the notion of "tuning" the mechanism of the motor car, exactly as a piano or an organ is tuned, with the two-fold object of modulating the plaint of its moving parts to a state of pleasing harmony, and reducing the wear to a minimum. Were it proposed to tune the parts with the single object of reducing the sound to melodious accord, the idea would appear tenable. But to speak of tuning the car, in the sense of proportioning its parts to reduce their vibration to a minimum, in order to prolong the life of the mechanism is so radical a proposition as to require demonstration. Yet such is the unique proposal offered in a paper read before the Society of Automobile Engineers by John Magee Ellsworth and Thomas J. Fay,

"Of the refinements constantly going on in automobiles there are some so far below the surface as not to attract the notice of even designers of some automobiles," is the broad introductory observation. It is a matter of common knowledge that "an attractive color" and a "noiseless performance," will do more to sell a car than "all the talk about quality of material and duplication of parts" that can be formulated by the most glib-tongued of salesmen.

The natural assumption is that these are at best but superficial criterions. Yet such is not apt to be the case as a rule. For instance, "it is not usual to discover a $1,900 body on a $900 chassis, and, on the whole a good looking body is a good sign." But the public which so insistently stipulates a good-looking body, also requires a silent performance. "Is it because the noise is more disagreeable than the noise of a trolley car, to which the public's ear has long been trained? The salesman who sees no more in this gross discrimination is still an infant in the automobile business, with the chances in favor of remaining a dwarf until the hay wagon comes to take him back home.

"The real attraction about noiseless performance is not to be rid of the noise at all, because, no sooner is the noise dismissed than a muffler cut-out is demanded, not because of utility, but to make a noise," continues the paper in question. "The real attraction about noiselessness in the performance of an automobile is quite another matter. Noise in machinery is the surest sign of a high cost of maintenance that can be read. Noise is the product of vibration, and vibration is the manifestation of the oozing life of the material, just as the tick of a watch measures the lapse of time. It is passing strange that one can learn on a page in a book that steel is subject to fatigue, that its dynamic ability is limited, that vibrations are of the greatest detriment to the steel, and turn the pages of the book, there to be told that flexibility is the desirable element in an automobile. . . . .

"To analyze sound is to investigate vibration, and since it is to vibrations we must look for the microbe that destroys the steel in the automobile, it is from the analysis of sound that some profit will be derived. . . . Sound would scarcely be a guide to go by were automobiles run in vacuo, because then the vibrations would be present without the accompanying sound to serve as a warning."

Sound manifestations depend upon the three well-known elements of pitch, intensity and timbre, expressing the number of vibrations to which the sounding body is subjected, the amplitude of those vibrations, and the quality of the tone, which depends upon the mingling of the elemental tones, or, literally, sound-color. The pure tone is the product of but a single set of vibrations; the complex tone is the product of several sets of vibrations, differing both in pitch and intensity, which combine to produce an effect which may be either harmonious or discordant according to their nature and arrangement.

Merely subduing a sound, or muffling it, does not affect the vibration which is its cause. But by so designing the vibrating element as to produce pure, or at least, harmonious sound, it is possible not only to secure an effect which is not distasteful to the ear, but also is less injurious to the vibrating body itself. For discord aside from being disturbing to the nervous system, indicates a disturbance to the molecular structure of the vibrating medium which is exactly parallel to the tremor of the distraught nerve. As the authors summarize the idea:

"Noise, as distinguished from sonorous sounds, that is to say, discords, are the most undesirable; not because the ear rebels, but for the indication of unwholesome vibrations that must in the end quench the life out of the steel. Next to the din of unwholesome noise, there are the notes, operatic treble contortions, telling of high pitch waves, with the consequent high rate of vibration per second of time.

"The real automobile (the car the purchaser asks for) goes along the road almost silently, or quite so in the better illustrations. If there is a sound 'tis the beat of the multiple of base organ pipes, and it tells a story that the owner of the car repeats, the one the echo of the other, the whole in accord. Can an automobile be deliberately designed with the idea of fixing the pitch, intensity and the 'klang-farbe?' Certainly. This is probably the reason why some automobiles are so very popular. They are so designed. They are a living example of the difference between design and contrivance. The chances are even the contrivers of cars do try to render their handiwork less noisy than they are, but, instead of going about it in a way to produce base chords, they muffle the noise as best they can.

"To make a success of a matter of this sort, it is necessary to take into account the laws that sounds obey. The propogation of sound waves follows out certain schemes of nature, the knowledge of which is essential to success. . . . .

"It would not be necessary to discuss the sound or the phenomena resulting if it were possible to prevent the members of the automobile from vibrating. To do this is to so shape them as to render them immune from vibrating tendencies. By looking into the question of the vibrations in members it may be possible to glean a clew as to the direction of minimum risk. To proceed is to divide the several members into the classes in which they will appeal to the designer, one method is as follows: (a) Cantilevers; members held at one end. (b) Members fixed at both ends. (c) Discs, circular; held at the axis. (d) Flat surfaces. (e) Tubes. . . . .

"In the automobile it will be possible to resolve nearly, if not quite, every member into the one or the other of the shapes as above set down; hence if definite information can be had in relation to the shapes involved, it will be possible to do something about the question of the resultant sound. There is one other point, i. e., the sound may be due, not to shape, but to the juxtaposition of two relating members. It may not be so much to echos that such sounds will be due, and the chances are that the broad question of accoustics will be involved, that is, sounds may be reflected, deflected, refracted, diffracted and put into interference. Under all these conditions, it is quite possible to predict that whilst the members may not (unaided) produce sounds of a nature to be condemned, the workings of the parts in juxtaposition might result in sounds not to be tolerated.

"Were it not for the fact that it is the vibrations that should be suspended rather than the noise to be dampened, the simple solution would be to 'devise the machinery so as to have it within a hermetically sealed chamber and exhaust the air.' Then there would be no noise at all."

By way of illustrating how the principles of sound phenomena may be applied to the design of the automobile the intensity of sound is considered a little more closely. "This property of sound," say the authors, "varies inversely in the square of the distance. Compressing the air or the medium, whatever it may be, increases the intensity of the sound. The intensity of sound is, of course, secondary to the fact of its production, and in that production certain laws may be taken into account.

"In tensioning members, assuming a uniform section, the effect of changes in length, section and tension will affect the sound as follows: (a)The number of vibrations in a given time are inversely as the length,

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considering a constant tension. (b) The number of vibrations in a given time will be inversely as the diameter, considering a given length and a given tension. (c) The number of vibrations in a given time are as the square root of the tension, considering a constant length and section.

"Obviously, changing the material alters the vibrations, or if the molecular structure changes the number of the vibrations in a given time will change also. Here we have a fine way to note the effect of service on material, since, if the parts are investigated when new to ascertain their value in vibrations per second, the effect of time and service will be noted by the simple expedients of subjecting them to duplicate tests, from time to time. This method of investigation might also be called into play to ascertain if the parts are up to a predetermined standard, since, if the value in vibrations be not the same the material will be either different or in a different state.

"It matters not at all, if the change is because of a difference in the micro-structure rather than the substitution of a different material, since the service might even be worse for an altered material. It was said, if the member is changed in length the vibrations would change inversely as the length. That is to say, if a member is of increasing length it will have decreasing numbers of vibrations, provided the section and the tension are held the same. By this law, one should have parts of the greatest possible length if it is the desire to have the vibrations of the least number.

"It was also said the vibrations are inversely as the diameter. That is, if the diameter is doubled, the vibrations will be halved. In this law is evidence of the fact that short, stubby parts will vibrate the least if the tension is the same. But it was said, if the tension is increased the vibrations would increase, as the square root of the increase in tension. Here is evidence of the desirability of holding to a low tension in pounds per square inch of section, or what amounts to the same thing, a low tension in proportion to the static ability of the material.

"On the whole, then, these laws cry for conditions as follows:

"(I) If the length of a member is short, it should have a considerable sectional area in all planes subject to vibration, to hold the latter as low as possible.

"(II) To hold the vibrations as low as possible the section should be great, no matter what the length.

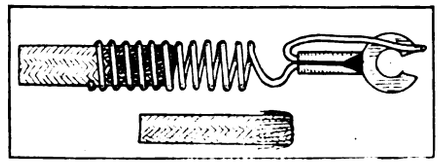
"(III) The static ability of the material should be very great in proportion to the static load. This dictum stands for other reasons, as for illustration: The dynamic life (expectation) depends not only upon the number of the vibrations per second of time, but upon the extreme fiber strain to which the member is worked during the period of vibration. . . . .

"It is the bell, the tube, the sounding board, and the tuning fork phenomena that are responsible for the sounds and the noise alike in the automobile. Eliminate the bell, abandon the clapper, put kinks in the sounding board, shorten the tube, and stiffen the tuning fork, and the automobile 'will fold its tent like the Arabs and as silently steal away.'"

Terminal Connection with a Spring.

One of those ingenious little devices which appears well worth while and which has had practical usage and serves practical purposes, is the terminal connection for battery, spark plug or coil, which just has been patented by Harry Read, an automobile engineman in the employ of the department of street cleaning of New York City.

The intention of the inventor was to produce a flexible terminal which would overcome the frequent annoyance caused by the



breaking of the wire, due to vibration. This has been accomplished by the use of a spiral spring. But additional features have been added by bringing the straight end of the wire, of which the spring is made, around by the side of the slot in the terminal where it serves to keep the nut tight by pressing against it. This end serves the additional purpose of being available for insertion in the hole in a dry battery pole where provision is made for only this form of contact.

Not the least original of the ideas incorporated in the Read terminal is the method of attaching it to the wire of either the primary or secondary circuit. Having removed the insulation, the bared wires are simply spread back over the outside of the insulated wire as shown in the illustration; the coiled spring can be screwed on, the insulated portion of the wire over the bared ends, thus securing a relatively large area of contact surface and obtaining a practically permanent connection without the use of solder, as any strain on the spring serves to contract its diameter as it is lengthened, in this manner a tight connection, which yet may be readily removed, is possible.

Proper Use of Wrenches.

One of the great temptations when giving a car a general overhauling, or even when only one or two loose nuts need tightening, is to resort to a convenient monkey wrench, as this tool is quickly adjusted to take either the large or small nuts. But there is danger in doing that sort of thing as the purchase which is obtained when a ten or twelve inch wrench is employed is far in excess of that which is needed for properly tightening a small nut and it is a difficult matter to make proper allowances for this purchase so that the bolt shall not be twisted off. A better plan is to have at hand an assortment of solid or S wrenches, as these are designed to the end that their length will be proportionate to the amount of the strain which should be put on the nut that they are made to fit, and it is a rare occurrence to destroy a bolt when one of these is used, unless the very purpose of the wrench is defeated by the use of a length of pipe, to obtain a greater leverage, being put on the wrench.

History in a Maxwell-Briscoe Souvenir.

"Faith and Its Realization, the Story of an Industrial Accomplishment," is the title of a new publication of the Maxwell-Briscoe Motor Co. The book gives an interesting history of the beginnings of the new factory of the company at Newcastle, Ind., and chronicles and illustrates the ceremonies of the corner stone laying. Value is added to the book by the reproduction of the speech delivered on the occasion by Vice-President Fairbanks, who, himself a native of the State of Indiana, laid the corner stone and made an eloquent address dealing with the rapid development of our national industries and the solution of national problems.

Don't Use Pliers on the Spark Plug.

While it is desirable that the contact between the spark plug and secondary terminal should be as secure as possible, it is unwise to resort to pliers for the purpose of tightening the binding nut on top of the plug. When tools are used to make this connection secure, it frequently happens that the porcelain is broken or that the entire core of the plug is turned, so that the distance between its sparking points is sufficiently altered to effect the travel of the spark so that it is forced to jump more or less than the 1-32 which is usually the required distance to obtain the best results.

One of the Cold Weather Precautions.

A rare, though possible accompaniment of cold weather arises from the collection of an undue amount of moisture in the air-pipe leading from the engine to the fuel tank in a car equipped with the pressure system of carburetter feed. The result is a choking off of the pressure line, either partial or complete, which occurs after the car has been permitted to stand in the cold for some little time. Where it is impossible to disconnect the piping handily, the most obvious and satisfactory remedy is to swathe the line with cloths wrung out in hot water.

Garage Crap Game Raided.

The garage of the Roseville Motor Co., at Orange and Fourteenth streets, Newark, N. J., was raided by the police at 4 o'clock Saturday morning last. The police found nine men "shooting crap" and each was fined $10, when later arraigned. None of the men arrested were employed at the garage, however, entrance having been effected by a chauffeur who had a car stored there.

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DEVELOPMENT OF THE SPARK PLUG

Refinement of Construction without Radical Change of Form—Old and New Types and Their Features.

While there is little resemblance in the gas engines of to-day to those of six or seven years ago, the same statement cannot be made in reference to the spark plug, which, despite considerable refinement, retains the same general form and construction that it has had from the beginning.

Since the earliest days of the jump spark there has been almost no change in the principles of the plug. Though the first models were frequently found with two or three bushings, a gasket or two and occasionally some device or contrivance for injecting a priming charge into the cylinder through the plug, the general principle of a core and base, so arranged that the spark jumped from the former to the latter, was, in effect, the same then as it is now. While this principle has been carried out in a great number and variety of ways, the changes have merely been in some small and unimportant detail, which has had no bearing on the general shape of the plug itself, but has served only to carry out the theories of the makers.

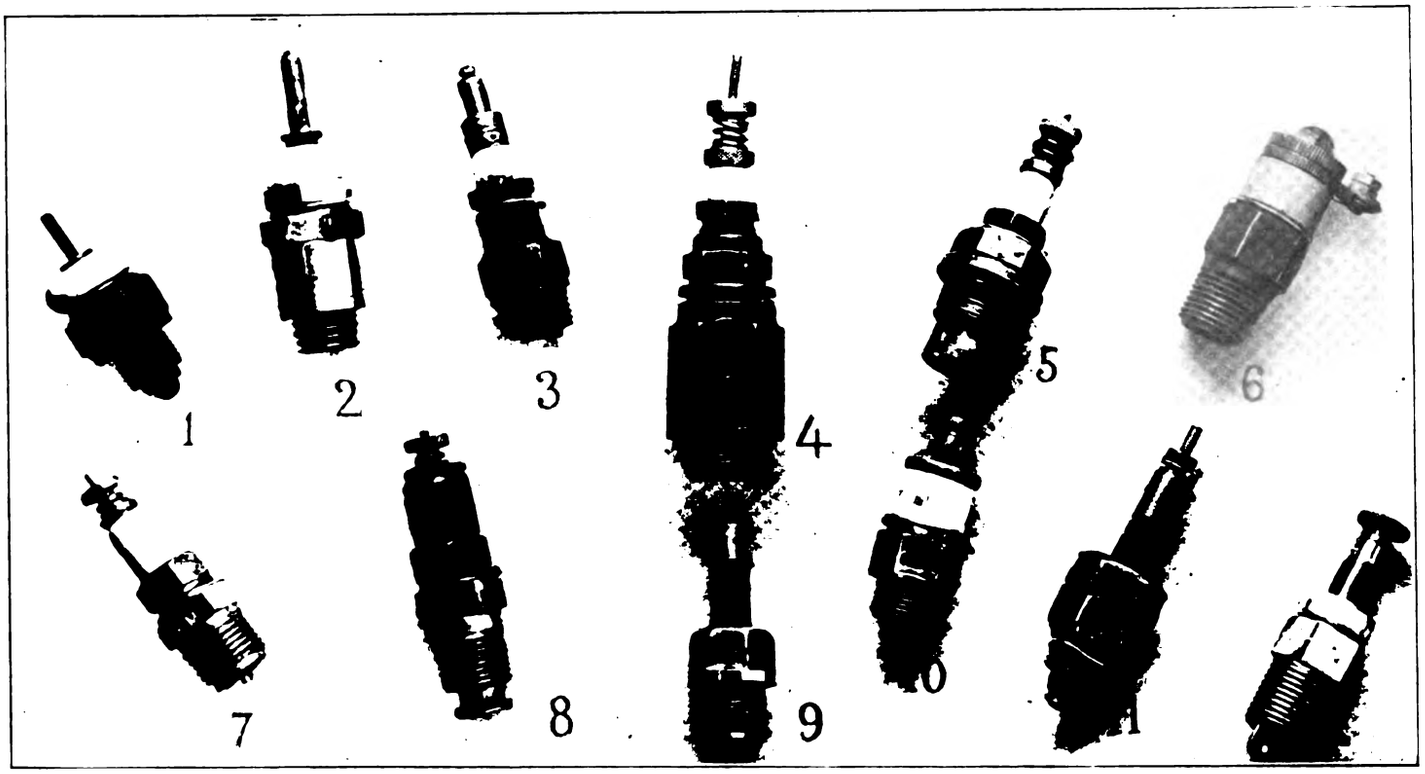
Dividing into groups the plugs shown in the illustration, it is seen that the group consisting of Nos. 1, 2 and 3, have a center core of porcelain, through which is carried the terminal. The plugs Nos. 1 and 3 are obsolete French types which found favor in 1900-01. The former known by various names in this country, is possibly best remembered as the G. C. S. Bougie; the core of it is much like a cylindrical metal ball, while No. 3 is the early De Dion, of which there were many imitations; the terminals in this were short curved wires. No. 2 is a plug that is well known on the other side of the pond, and which has found some favor on this. Like the other two in the group this "Pognon exporta" has the wire terminal incased in porcelain, the features of it being the so-called hollow, or cup, porcelain that permits of a greater sparking surface. The Pognon presents an unusual appearance because of the great amount of metal used in the base; in this respect it is entirely unlike any of the others in demand at this time, as the general tendency is toward compactness.

No. 4, the "Non-Stop," is the invention of A. W. King, at one time interested in the manufacture of the Gasmobile. This plug which appeared in 1902, is entirely different from any that have been offered for public use. Large and cumbersome, it was constructed to contain a firing chamber into which a priming charge could be easily injected through a pet cock screwed into the hole in the lower shell. An idea of its size may be obtained by comparison with the plug pictured beneath it, a modern "Jewel," the whole of which barely equals in length the distance from the bottom to the lowest hexagon nut of the larger plug.

The two others on the top row, Nos. 5 and 6, represent types in which the center core differs from many because of its shape; in the former a pear shaped metal extends to a point near the circular metal band which is mounted on the body of the plug, the point of the pear serving as the terminal from which the spark jumps. This plug is rarely if ever seen now. No. 6 is the well known Herz, unusual in shape and having a distinguishing feature in the substitution of stone or lava in place of porcelain. The electrode in this plug is round and occupies nearly all of the base to which the spark jumps from a slight projection on the core.

Two entirely modern and well known plugs, the "Miller" and "Spitfire," Nos. 7 and 8, respectively, serve to illustrate different ways of working out the same idea. The claim for both of these is that they can not be fouled by carbon deposits or short circuited by oil. In the Miller plug the results are obtained by retaining for air space the entire interior of the base. The porcelain insulation comes only to the top of the shell where it is secured by a bushing; no insulation is in the base, the terminal of heavy wire being sufficiently rigid to retain its position. The other plug, the "Spitfire," is much like this in that a large area of air space is retained, the difference being that a hood or cap offers the surface for the grounding of the plug. A characteristic of this plug is a fiber shield to protect the porcelain.

The "Jewel," No. 9, needs no description. Its reproduction here serves to dem-



OLD AND NEW TYPES OF THE SPARK PLUG

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onstrate the simplicity of present construction in contrast to the productions of a few years ago when a quantity of body metal was surmounted by a series of bushings, gaskets and even springs.

The last three plugs depicted are of interest because of the introduction of a different principle. In No. 10, the core is hollow and contains a valve seat into which a ball is forced by the compression stroke of the piston; on the suction stroke air is taken in through the core, the object being to correct the mixture by the additional air which also serves to keep the contacts clean. This plug, known as the H. M., did not attain great popularity, and soon after its introduction in 1905, was withdrawn from the market.

The other two of this group, Nos. 11 and 12, are examples of a vibrating plug first introduced this year. No. 11 is the original model from which the other has developed. This plug consists of three parts, the base, the bushing and the core. The core is the usual form employed in mica plugs, but has a brass tubing, with a shoulder, incorporated in it. In the bushing is a valve seat into which the core shoulder fits; the suction and compression strokes of the engine piston keep the plug core in rapid movement and by this movement carbon deposits are prevented.

With the exception of the vibrating plugs and the mammoth No. 4, all the plugs shown in the illustration are practically alike, save for the slight differences which have been described.

Odd Substitute for Valve Spring.

The "mother of invention" is responsible for many happy solutions of difficulties which might have caused almost endless annoyance. This was recently illustrated when a motorist suffered the inconvenience of a broken intake valve spring while on a country road, far from repair shops or stores, where material for temporary repairs could be obtained.

Though the mishap was small in itself the consequences were annoying as one cylinder was effectually crippled by the break. But the difficulty was there and the means for overcoming it at hand. When the fertile brain, spurred by the prospect of a delayed trip, suggested the use of a piece of spiral spring such as could be obtained from a window shade roller. At the first house the ownership of the interior mechanism of a window curtain changed hands for a slight consideration, and after cutting it to the proper size for its new use, the ingenious motorist went on his way rejoicing.

Doubles Output of Alumaloyd Sheets.

Since the Stark Rolling Mills Co., Canton, Ohio, added alumaloyd sheets to their productions, the capacity of that department has been doubled. The material found an almost instant demand from the automobile trade.

ABOUT CHOICE OF LUBRICANTS

Meaning and Importance of the "Flash Test" and "Viscosity"—Why Mineral Oils are the Best.

It is a safe assertion that at least 99 out of every 100 motorists give time and thought to the questions which arise in the selection of the various accessories with which they equip their cars. If a speedometer is wanted, it does not follow that the first one which may be suggested will be bought, but rather that an investigation into the merits of the different ones will be made, and that which is finally selected will be the choice because of certain qualities which it possesses that appeal to the purchaser who thinks it the one best adapted to either his use or his pocketbook—and the price is not always the determining factor.

This same reasoning and investigation is applied to all the other minor parts of his equipment whether it be spark plugs or storage batteries, clocks, tops or wind shields. And yet one of, if not, the most important of the supplies which have to be bought is selected without consideration or intelligent inquiry as to its merits and is used with an absolute disregard of its possible effect on the power plant, and that is the lubricating oil.

The motorist may say that he is helpless in the matter of selection of a proper lubricant; and to a certain extent this is true. It is very probable that little meaning would be conveyed to him if he was told that a certain oil had a "flash" of 425, and as for the word "viscosity," it suggests something remote, if it suggests anything at all.

But, as an actual fact, does the average automobilist know the difference between a babbited bearing and one made of white bronze? Can he tell which is preferable? Does he know anything about the r.p.m. of his flywheel, or care? And yet before the purchase of a car is made, catalogues are conned, friends interrogated, and every precaution is taken to get the best that can be found within certain limitations.

But the question of a proper oil rarely is considered. The agent says get the P. D. Q. brand; a friend suggests something else and the bewildered owner tries both, though neither may be entirely suited to his particular type of car.

The essential point in the lubrication of an automobile is to have an oil that will be consumed by the heat generated in the cylinder, and at the same time, be high enough in flash so as not to be consumed too quickly. If it is too high in flash, the result is distillation, which leaves behind a heavy deposit that becomes carbon and causes the trouble that motorists are familiar with. In a water cooled cylinder this is very apt to occur, as the walls of the cylinder are comparatively cool.

"Flash," it may be well to explain, is the temperature at which the vapor from the oil will ignite, and when the expression "425 flash" is used it signifies that the vapor from the oil will be ignited at a temperature of 425 degrees Fahrenheit, and incidentally this is just the test that is most desirable in the lubrication of a water-cooled engine. In the air-cooled cylinder a different condition exists, as the much higher temperature to which the cylinder walls are heated would at once consume an oil that would serve perfectly in a water-cooled machine, and the destruction or consumption of the oil would occur before it had performed its lubricating functions.

In seeking a proper lubricant, care should be taken to obtain an oil which will not "gum" or cause corrosion or oxidation. Oils containing a large amount of animal matter should be avoided as the action of the animal oils on metals is deleterious unless all the fatty acids have been extracted, and where it is used for splash lubrication the oil is apt to saponify, making a clotted mass in the crank case far too dense to permit of a sufficient portion of it reaching the bearings and cylinder walls. Animal fats have no special value as lubricants, as compared with mineral oils, and the use of them simply increases the cost without adding to their efficiency.

Where animal oils are used there is little benefit derived, as these contain oleic and stearic acids and quickly form a soapy mass when beaten or churned by the crank. As an engine lubricant they are almost an utter failure and have the additional bad feature of deleterous effect on the metals.

If consumers would obtain the oil best suited for their purpose, inquiry at any oil dealer's would result in getting a mineral lubricant with a flash test of about 425 degrees for the water cooled cylinder, or from 475 to 525 for air cooled, and which is not to viscious or dense. Animal and most vegetable oils should be avoided for reasons already stated.

Melancholy Sequel to a Merry Ride.

It was a merry automobile ride that Charles Clark and Edwin Stuetlich took the other night in Milwaukee in a stolen automobile, so the police say. Clark went to the beer city some time ago from the East, to perfect himself in the knowledge of automobile parts manufactured by the A. O. Smith Co. While feeling festive, it is charged, Clark, accompanied by his friend Stuetlich, broke into the factory by smashing a door, took out an automobile and raced recklessly about the city. Next morning the car was found abandoned. In passing sentence Judge Neelan remarked that Clark might spend the next ninety days gaining useful information about the construction of chairs. Sentence was suspended on Stuetlich.

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LIGHT ON "UNIVERSAL LIGHTS" LAW

Massachusetts Legislative Committee Hears Arguments in Its Favor—Horse Drivers and Automobilists Agree.

Much light was shed on the question of requiring all vehicles to carry lights at night during a hearing given by the Massachusetts legislatve committee on roads and bridges on the 25th ult. The Massachusetts State Automobile Association, the Bay State Automobile Association, the Safe Roads Automobile Association, the Automobile Owners' Association and several of the leading automobile clubs in the State had representatives at the capitol in Boston, and there were present, also, an anti-automobile element represented by General Luther Stevenson of Hingham, who said he appeared in behalf of nine-tenths of the people of the Commonwealth who want more stringent regulation of motor vehicles. He read a long dissertation on the evils of the automobile.

While the hearing was intended to cover several of the automobile measures pending in the legislature the greater portion of the time occupied was given to the two "universal lights" bills. The codification measure was left until late in the session, at the suggestion of Colonel William D. Sohier, president of the Safe Roads Association, who made the suggestion with the view that any codification which is made can include amendments made this year. The two bills relating to number plates also were deferred on the representation of Colonel Sohier that a new bill had been drafted to cover the carrying of numbers on cars from outside the State, substantially as required of Massachusetts cars, and the proposal to make it a heavily punishable offense to drive a car without its number.

Of the "lights" bills, one entered by E. WentworthPrescott was taken up first. In advocating the proposed legislation Mr. Prescott related his experience in driving a horse and carriage, and said that he had had one collision and numerous narrow escapes because he was unable to see other vehicles using rubber tires. In his opinion the passage of the bill is necessary as a protection to life. There are often accidents caused by fire trucks running down carriages which cannot be seen on the roads. Automobiles are required by law to carry lamps, and other vehicles ought to be compelled to do the same for the protection of their owners and occupants. Mr. Prescott said he thought the Safe Roads Association bill would cover the point better than his measure.

Colonel Sohier thought it would be difficult to require that the light be seen in all directions; the term "visible" would seem to be a sufficient requirement. In most of the country districts the farmers generally carry lanterns at night hung under an axle, but the few teams without lanterns are the ones that cause trouble.

Elliott C. Lee, president of the Massachusetts State Automobile Association, favored having the light so placed that it could be seen both from front and back. In Europe it is required that the light be carried on the side. He stated that the State Association has voted in favor of the "lights" bill. Ex-Representative Charles J. Weir, as legislative counsel of the State Association, said that it is not the desire of the petitioners to put a hardship upon anybody. The burden of preventing accidents is now put entirely upon the automobilists who have to carry, in order to protect themselves and others, acetylene lights in addition to the small lights required by law. In his opinion the majority of the farmers now recognize the necessity of carrying a light on their wagons. Mr. Weir said he saw no need of requiring lamps on sleighs. Colonel C. L. Young of the Springfield Automobile Club brought up the question whether the bill would interfere with the present automobile law regarding the carrying of lamps on motor vehicles. He thought that the two should be made uniform so that the farmers will not have to light their lights any earlier than the automobilists. He thought that lights should be required from an hour after sunset until an hour before sunrise. Francis Hurtubis, Jr., in behalf of the Automobile Owners' Association, spoke briefly in favor of permitting the highway Commission to fix the place where the light shall be carried. In answer to questions by Representative Cook, Mr. Weir said that if the bill were passed the farmer without a light who was run into would have more trouble than at present in collecting damages.

Among others who spoke in favor of the bills was Vice-President L. R. Speare, of the American Automobile Association and chairman of the legislative committee of the State Association, who said that from talks he has had with farmers he had formed the opinion that most of them recognize the value of carrying a light. Dr. V. J. Irwin of Springfield, a driver of horses, said he favored the bill for his protection. Dr. Walter G. Chase called attention to the fact that in every civilized country vehicles are required to carry lights at night. Even in Malay states, where bullocks and cars are the principal means of locomotion, the carts must carry lights.

Speedway Talk at Salt Lake.

Salt Lake automobilists are interested in the proposition to build an exclusive automobile speedway between that city and Salt Air, a nearby pleasure resort. The road would be 15 miles long, 12 miles of the distance in a straight line. Although no details have been made public it is reported that the resort management and the local railway company are both interested in the proposition.

WILL RESIST DOUBLE TAXATION

Jersey Dealers to Oppose the Frelinghuysen Bill—If Enacted Its Constitutionality Will be Tested.

So far as the tradesmen of New Jersey, represented by the New Jersey State Automobile Dealers' Association, are concerned, there will be no more useless and long-winded debates with Senator Joseph S. Frelinghuysen looking toward a moderation in the proposed amendments to the New Jersey automobile law, contained in the bill introduced by Senator Frelinghuysen. These amendments consist of a sliding taxation of vehicles based upon horsepower, from $3 to $100 per year; a sliding scale for drivers' licenses, from $1 to $25; the granting "admission tickets" to non-resident motorists to use New Jersey's roads, at a cost of 50 cents per six days, and the abolition of manufacturers' and dealers' blanket licenses, besides several other minor changes.

That there will be no more conferences in regard to modification was shown Friday afternoon last, 28th ult., when the dealers held a meeting in Newark and decided to test the constitutionality of the licensing clause, if enacted.

The meeting of the trade association was an animated one and a resolution attacking the constitutionality of the proposed act was unanimously indorsed and a plan of battle decided upon. The meeting was attended by a majority of the members, all of whom were determined in the stand taken by the association. The resolution says that the association is unqualifiedly and unalterably opposed to the high, prohibitive and inequitable license fees proposed, and will seek the necessary funds by combining with the various automobile clubs of the State to test the constitutionality of the double taxation proposed under the form of license or registration. The resolution is as follows:

Resolved, That the New Jersey Automobile Trade Association, meeting in conference for further discussion of proposed amendments to the automobile law, is unqualifiedly and unalterably opposed to the high, prohibitive and inequitable license fees proposed, and that whatever funds be necessary to subscribe to the end of securing their defeat is hereby authorized. It is further

Resolved, That the New Jersey Automobile Trade Association combine with the various automobile clubs of the State and test the constitutionality of the double taxation proposed under the cloak of license or registration. That it is the opinion of this association that the constitutionality of this principle be tested in the highest courts, and that every effort be made to put automobilists on the same footing as every other user of the highways. Further, that this association is opposed to any change in the administration of the department, and that every economy should be practised and the department not be made a political ma-

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chine to be used for political purposes. Also, that this association is in favor of a law requiring all vehicles to display lights at night, and that every influence be brought to bear to secure the enactment of such legislation.

R. A. Greene and W. H. Ellis of Newark, and George Blakeslee of Jersey City, were appointed a committee with full power to act, to confer with representatives from the associated automobile clubs of the State, to the end that a reasonable law be enacted which will meet with the approval and respect of every automobilist, resident and non-resident, using the highways of the State. The tradesmen will seek the aid of the Boards of Trade throughout the State in its fight.

The action of the dealers was made on the principle that the State should not exact from the automobilist in license fees more than is absolutely required for the carrying on of the work of the automobile department, certainly not a tax intended, in part or as a whole, for the maintenance of the State road system. This and other kindred points will come up for discussion at a meeting of representatives of the various associated automobile clubs of the State to be held at the New Jersey Automobile and Motor Club in Newark on Friday night of this week, 6th inst. Senator Frelinghuysen, father of the existing New Jersey automobile law and author of the proposed iniquitous amendments, has promised to attend and will doubtless learn just how "high" in the esteem of motorists he is held.

That the meeting will not be one for compromise, is made plain by the officials of the New Jersey organization. They emphatically state that they have abandoned the policy of concession and compromise which has governed their action for the last two years, and will make use of every power at their disposal, political as well as otherwise, to make their influence felt. The action of the dealers in passing the resolution is fully approved and concurred in by the Newark club, and it is thought that all the other clubs in the State will use every influence to prevent the passage of the proposed Frelinghuysen amendments even if they are reported from committee.

The North Jersey Automobile Club, which has its headquarters in Paterson, also has officially gone on record as opposed to the Frelinghuysen amendments, but the Patersonians imply a willingness to compromise, as evidenced in the following resolution, passed at the last meeting of the club:

Be it resolved, That the North Jersey Automobile Club strenuously opposes the automobile bill and its proposed amendments politically and legally, unless we can obtain the following changes: A reasonable speed limit; reciprocal privileges to foreign automobilists; elimination of the persecution by constables and justices of the peace.

It is evident that the fight against unjust legislation as practiced upon automobilists in New Jersey is not going to be a half-hearted affair, as it has been in the past. New Jersey numbers several thousand influential citizens among its motorists, and their inuuence with members of the legislature doubtless will make itself felt if the aggressiveness which already has been manifested is continued in the fight against unjust automobile legislation, and there is no reason to expect a change in attitude.

Automobile Freight Line Project.

An automobile freight company to operate between Camden and Atlantic City, N. J., is said to be in progress of formation, following the successful inauguration of a similar service by a large Camden concern which does considerable business with Atlantic City. As yet the names of the backers of the new project have been kept in the background. It is declared that the Camden firm saves $60 on every load of goods it sends to Atlantic City, over what it would cost to send the same merchandise by railroad or trolley, and it is this fact which has prompted the formation of a regular express service between Camden, which virtually would mean Philadelphia, and the seashore resort. In view of the hard, level roads all the way between Camden and Atlantic City, there is no doubt of an automobile express service being possible.



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Automobilist Scores a Legal Point.

The question whether an automobile is a road vehicle in the ordinary acceptation of the term has arisen in one of the Pennsylivania courts, and an opinion has been handed down which, as far as it goes, is in contrast with the recent decision of the Massachusetts Supreme Court, denying that roads must be made safe and convenient for automobiles. W. W. Scranton is prosecuting a suit having as an ultimate object the opening to automobiles of the Laurel Run turnpike, the action having been filed in the court at Wilkes-Barre.

Mr. Scranton was refused the privileges of that road while driving a car from Scranton to Wilkes-Barre and his action is based on that refusal. The turnpike company in replying to his bill of particulars averred that the automobile is a vehicle not available for the road; that the turnpike was not built for motor machines, and that an automobile is a conveyance not generally used, and much different from a carriage to which horses are attached. Scranton met these averments by the contention that they are immaterial, improper and impertinent. This view was taken by Judge Lynch, who handed down an opinion on the 27th ult., ordering the averments stricken from the answer.

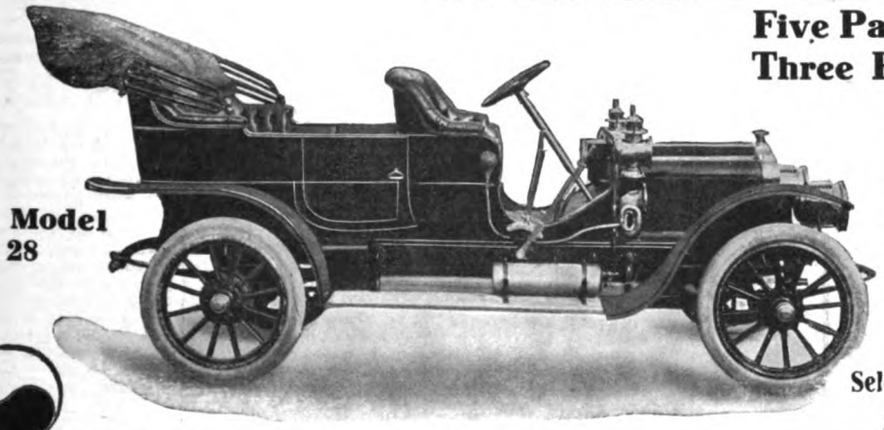
Mail Carrier's Profitable Automobile.

Emporia, Kan., has a motoring mail carrier in the person of George E. Mays, who covers a 27-mile route leading out of the city. Mays began carrying mail in 1894, and the high prices for horses and feed and the expense for buggies and harness led him to think of the automobile. Securing permission from the authorities at Washington, Mays purchased a runabout, and has been using it successfully in the delivery of mail. With horses it formerly took him from six to seven hours to cover his route; now, three hours is sufficient. He has kept tabs on running expenses and states that 30 to 35 cents for gasolene and oil per trip is all that it has cost him. After the mail is delivered each day Mays uses his car for livery purposes, thus adding materially to his income.

Quick Work in Mail Delivery.

Practical demonstration of the value of the automobile for mail service was made last Saturday, 29th ult., by James Miller, Jr., who covers the West Hartford rural free delivery route, in Connecticut. Miller's route is approximately 22½ miles in length and the average time required for covering it is about five hours. On Saturday morning Miller started out with a small runabout, and was timed by Postmaster F. M. Buckland. He had to make a larger number of stops than usual on account of a flood of advertising postal cards, the total of stops at mail boxes numbering 190. The time occupied was 1 hour and 55 minutes. Much of the highway traveled was rough and icy. Miller's outfit includes two horses and he thinks of making a permanent change to the automobile, estimating that not only would the cost of gasolene, oil and ordinary repairs be less than that of maintaining his horses, but unusual repairs and wear would be offset by the occasional loss of one of the faithful but hard worked animals.

THE SELDEN CAR



Model 28

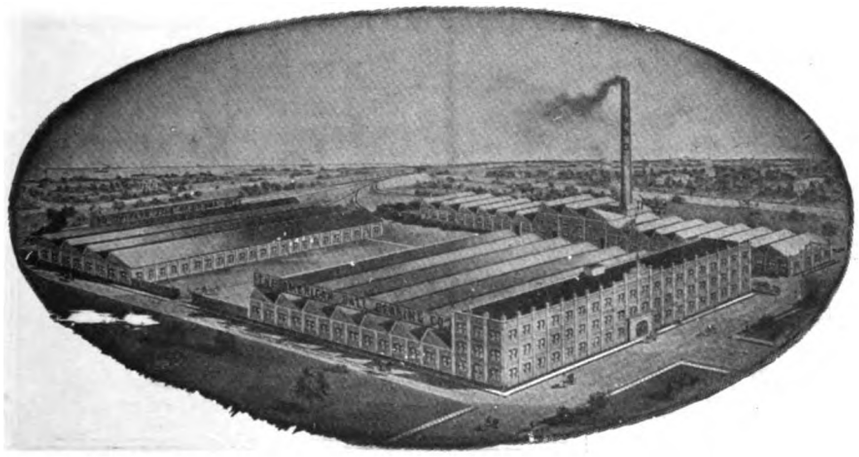
Five Passenger Touring Car $2000
Three Passenger Runabout $2000

AN ATTRACTIVE CAR AT AN ATTRACTIVE PRICE

SPECIFICATIONS—Engine, 4 cylinders, 4¼x4½, 28-30 brake horsepower. Transmission, 3 speeds forward and reverse, selective, Timken bearings. Wheel base, 109 inches; tread, standard; clutch, cone leather. Body, sheet metal, straight line type, roomy and comfortable. Tires, 32x3½, quick detachable; make optional. Frame, pressed steel, 4¾ inches deep. Front axle, single I-beam drop forging, ball bearings. Rear axle, bevel gear drive, enclosed type, roller bearings. Ignition, synchronized jump spark. Weight, empty, 2,200 lbs. (actual, not catalogue).

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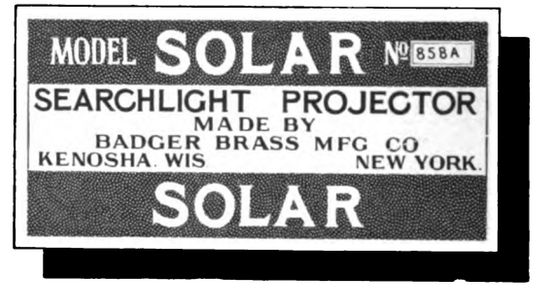
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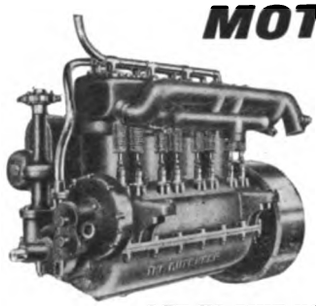
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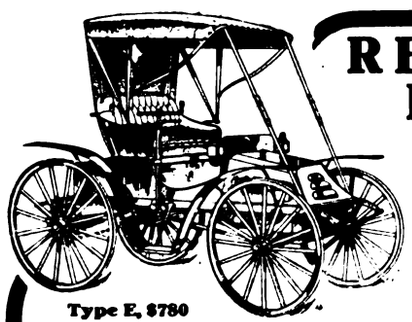
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The Week's Patents.

875,542. Tire Valve Stem Protector. Charles W. Lurtey, Little Rock, Ark. Filed May 15, 1906. Serial No. 316,900.

The combination with a tire having inner and outer sections, of a valve stem machanism projecting from the tire, and a stem protector comprising a base plate that is located between the tire sections, said plate being longitudinally and transversely curved, and an open ended sleeve projecting from the base plate and from the tire and surrounding the projecting portion of the valve stem.

875,556. Vehicle Fender. Jacob L Schureman, Chicago, Ill., assignor to Appliance Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 21, 1907. Serial No. 358,616.

1. A vehicle fender comprising, in combination, an impact bar, supporting rods connected with said bar, guiding supports adapted to be secured to the sides of a vehicle and in which said rods are guidedly supported between their ends, cushioning means for the bar interposed between it and said guiding supports, and guide brackets adapted to be secured on opposite sides of a vehicle and having elongated guide slots in which the rear ends of said rods are removably confined.

875,693. Vehicle Spring Check. Herbert Cottrell, Newark, N. J. Filed Jan. 9, 1907. Serial No. 351,410.

1. A vehicle spring check, comprising a longitudinally divided clamping case, adapted to be attached to vehicle body, and to be adjusted in clamping frictional contact with an internal cylindrical crank hub provided with circumferential wedge rings upon its surface, and a lever arm and connecting rod, to attach to lower spring or axle; to resist rapid spring compression or extension; substantiall as described.

875,716. Carburetter for Explosive Engines. Adele A. Longuemare, Paris, France. Filed Nov. 11, 1905. Serial No. 286,878.

1. In a carburetter the combination of an atomizer for the fuel, a choke tube surrounding the atomizer, said choke tube comprising the frusta of two hollow cones connected by their smaller ends, a valve seat formed by the base of the lower frustum, a supplemental air valve adapted to fit the valve seat on the choke tube, an inclosing casing surrounding the air valve, a helical spring arranged between the top of the valve and the casing and adapted to press the valve upon its seat, said spring being capable of being overcome by a reduction of pressure within the casing, and means for controlling the movement of the valve substantially as set forth.

875,726. Vehicle Wheel and Tire Therefor. Valentine H. McDowell, Lynn, Mass Filed Sept. 14, 1906. Serial No. 334,641.

1. An elastic tire adapted to contain air, and provided with a plurality of clencher engaging flanges separated by a space at each edge of its base portion, the body of the tire and said flanges being reinforced by continuous textile fabric embedded therein.

875,759. Shock Absorber. Lawrence Whitcomb, Brookline, Mass. Filed July 10, 1907. Serial No. 383,044.

1. In a shock absorber, in combination, a hollow member capable of being attached to the vehicle spring or axle, a co-operating member with said hollow member, cork inserts in one of said parts, an expander, a threaded rod secured to said expander, a threaded sleeve or nut adjustable on said threaded rod and engaging said co-operating member to limit the movement of said expanded and thereby regulate the pressure of said co-operating member, substantially as described.

875,766. Vehicle Attachment. Frank R. Allen, Passaic, N. J. Filed May 15, 1907. Serial No. 373,736.

1. In combination with a vehicle body, and the running gear thereof, strips secured to the under side of said body, tracks secured to the running gear and being disposed in vertical alignment with said strips, and guiding members each having a horizontal portion between said strips and tracks and a downwardly and inwardly extending part engaging the top, side and bottom faces of said tracks.

875,800. Friction Clutch Pulley. John Gilson, Port Washington, Wis., assignor to Gilson Manufacturing Company, Port Washington, Wis., a Corporation. Filed May 11, 1907. Serial No. 373,061.

1. In a friction pulley, the combination with a rotatable shaft, of a clutch member fixed thereon and having a hub and friction disc, a bolt loosely engaging the hub at one end and threaded at its other end, a second clutch member slidable upon the outer end of the hub and rotatably engaging the bolt,

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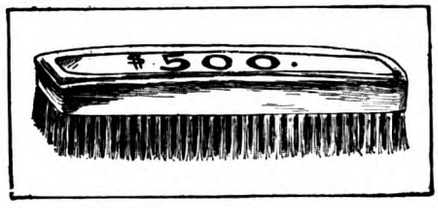
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a pulley loosely mounted on the hub of the fixed clutch member between the friction disc and slidable clutch member, and a nut adapted to move the slidable clutch member against the outer end of the pulley.

875,892. Mechanical Movement. Tracy V. Buckwalter, Altoona, Pa. Filed March 21, 1907. Serial No. 363,558.

1. The combination of a shaft, a wheel, a universal joint having a pivotal connection to said shaft and a pivotal connection within said wheel, a wheel movable about an axis transverse to said shaft, and means for connecting said wheels so that one is driven from the other.

875,907. Sparking Device. Benjamin G. Gilbough, Chicago, Ill. Filed Dec. 26, 1906. Serial No. 349,554.

1. In a sparking device, the combination of a tubular plug adapted for connection with an engine cylinder, a cylinder mounted thereon and in communication with said plug, a piston movable in said cylinder and having a stem projecting beyond the outer end of the cylinder, a vibratory electrode extending into said tubular plug, an actuating member for said vibratory electrode, and a pawl connected with said actuating member located in the path of the piston-stem, whereby the piston serves during its outward movement to move said actuating member through the medium of said pawl, the pawl being so arranged with relation to the piston stem as to be released to permit said actuating member to return to its normal position when the piston reaches the outer end of its traverse.

875,942. Acetylene Lamp and Lighting Device for Automobiles and Other Vehicles. Svend M. Meyer, New York, N. Y., assignor to George Clinton Batcheller, New York, N. Y. Filed Dec. 21, 1905. Serial No. 292,852.

1. An acetylene lamp and self-lighting system for vehicles comprising an acetylene generator and an electric battery mounted together in a connecting frame; a series of suitably arranged lamps, conductors connecting from the battery to the several lamps and a switch closing the circuits through the several lamps for lighting selected lamps at the will of the operator, subtsantially as described.

875,991. Air Cooling Apparatus for Explosive Engines. John E. Gilson, Port Washington, Wis., assignor to Gilson Manufacturing Company, Port Washington, Wis. Filed May 16, 1907. Serial No. 374,056.

1. An explosive engine cylinder, a rotary fan supported in connection with the cylinder parallel to same, and a circular casing for the fan having a hood extension inclined inward toward the axis of said fan beyond the cylinder head.

875,994. Tire. William D. Harris, Philadelphia, Pa., assignor to Harris Tire & Rubber Co., Philadelphia, Pa., a Corporation of Maine. Filed May 16, 1905, Serial No. 260,707. Renewed Feb. 2, 1907. Serial No. 355,472.

1. A tire including a body of fabric, a tread portion of resilient material outside of the same, and a series of fibers extending through the tread portion in a line substantially perpendicular to the wearing surface thereof and abutting upon a body of fabric, with a second body of fabric engaging said perpendicular fibers for spacing and holding them in position, substantially as described.

876,034. Steering Device for Automobiles Thatcher P. Wilson and Walter W. Wilson, Longbeach, Cal. Filed March 11, 1907. Serial No. 361,642.

1. The herein described means to steer an automobile, comprising in combination with the drag link of the automobile, a shifting bar pivotally mounted on the frame, one end of which is slidingly engaged to the drag link, and carrying on the rear end thereof a boss revolubly mounted thereon adapted to enter into a groove in the periphery of a revoluble cylinder; a revoluble cylinder keyed to a gear shaft and having an annular groove therein, the said gear shaft being workably connected with the steering wheel.

876,070. Automobile. Walter W. Macfarren, Pittsburg, Pa., assignor to William H. Donner, Pittsburg, Pa. Filed July 23, 1906. Serial No. 327,328.

1. The combination with a vehicle, of steering mechanism comprising a substantially vertical sectional steering shaft, connection between each section of said shaft and a pair of wheels to steer the same, and a clutch mechanism adapted to connect the said shaft sections so that they will rotate either in the same or opposite directions.

876,104. Steering Knuckle for Automobiles. Hinsdale Smith, Springfield, Mass. Filed Feb. 13, 1907. Serial No. 357,179.

1. In a steering knuckle, the combination with the fixed axle and a stationary upright post at the end thereof, of a rotatable sleeve bearing a stub journal inclosing said post and having an integral cap covering the top thereof, said sleeve having a lateral axle receiving opening extending upward from its bottom, whereby the sleeve may be slipped down into position from the upper end of the spindle.

876,154. Shock Deadener for Vehicles. Gaston Dumond, Paris, France. Filed July 30, 1906. Serial No. 328,465.

A double acting shock absorber for vehicles comprising a closed cylinder containing a fluid and an arch-shaped piston of such diameter as to provide a space between it and the wall of the cylinder, thereby establishing communication between that portion of the cylinder above the piston and that portion below it, said piston further provided with a port, and a spring controlled double-acting valve mounted in said port, said port further establishing communication between that portion of the cylinder above the piston and that portion below it.

876,168. Vehicle Wheel. Ira L. Goodrich, Curpertino, Cal. Filed Feb. 9, 1906. Serial No. 300,239.

1. In a wheel construction, the combination of a stationary axle, a sleeve rotatable thereon, a hollow hub having a limited radial movement relative to the sleeve, an annular air cushion between said sleeve and hub, fixed and movable annular flanges at the ends of the sleeve, said hub having annular ends opposing said flanges, said flanges each having an annular groove and a series of balls within said groove and engaging the contiguous surface of the annular end head of the hub, and annular packings between the end heads of the hub and the flanges, one of said packings being arranged outside of the series of balls and the other packing being arranged inside of the same series of balls whereby a dust-proof joint is formed.

876,210. Carburetter. John H. Miller, Bridgeport, Conn. Filed Aug. 6, 1906. Serial No. 329,373.

1. In a carburetter, the combination of an inlet for a hydrocarbon liquid, an air inlet for the purpose of bringing air into contact with said hydrocarbon liquid so as to form an explosive mivture, a movable baffle plate for partially obtsructing the flow of air through said air inlet, a lever supporting said baffle plate, a cylindrical member encircling said lever, and a lug of arcuate form mounted upon said cylindrical member and provided with a level face for controling quantitatively the degree of movement of said lever.

876,214. Vehicle Wheel. John H. Morris, Omaha, Neb. Filed June 15, 1906. Serial No. 321,864.

1. A vehicle wheel, comprising a tubular rim, a hub, a disc fixed thereto, hollow spokes fixed to the hub and disc, a pair of springs detachably fixed to the outer end of each spoke and being yieldingly attached to the hollow rim.

876,272. Means for Flexibly Connecting Parts of a Vehicle to a Frame. Edward J. Gulick, Mishawaka, Ind. Filed Feb. 21, 1907. Serial No. 358,712.

1. In combination with a frame member, and a supported member, of a socket on one of said members and a ball on the other member to constitute a ball and socket joint, a bolt extending through said members, and a spring surrounding the lower end of the shank of said bolt and secured beneath said frame member, whereby said frame and supported members are yieldingly secured together, substantially as described.

876,287. Carburetter. Morris L. Williams, Philadelphia, Pa. Filed Aug. 11, 1905. Serial No. 273,832.

1. A carburetter having a hydrocarbon passage, a valve for controlling said passage, a plurality of ducts into which said passage discharges, an air passage discharging through said ducts, and a valve for controlling said ducts and air passage.

876,351. Motor Wagon. August Hoedt, Peterawe, near Obersitzko, Germany. Filed April 5, 1907. Serial No. 366,481.

1. In a motor carriage the combination, an axle, a friction wheel on this axle, a friction disc in tangent with the said friction wheel, the axle which is connected with the said friction disc, the gearing running with the friction disc, the casing fixed to the gearing, the differential mechanism in the casing, two axles protruding from the said casing made movable and shiftable by the universal joints, and turnably arranged in the bearings, springs holding the said bearings and fastened on the axle, toothed wheels fixed at the ends of the said axles adapted to engage with the teeth of the respective wheels, the latter wheels being connected with the wheels, two hollow axles on the said axle having guiding ribs friction wheels having grooves engaging with the said ribs and adapted to be shifted by the sockets which are sliding on the bar having right and left screws, friction clutches at the utmost ends of the said hollow axles, a bar supported parallel to the axle, arms and rings on this bar, the rings of which are adapted to slide in a groove of the hollow axles which are fastened by screws on the axle and also adapted to be coupled with the said friction clutches, means enabling the coupling consisting of the springs fastened to the rings adapted to press the friction part 22 against said friction clutches, means for steering both the pair of wheels by turning the respective axles in the same, but opposite angles, substantially as shown and described.

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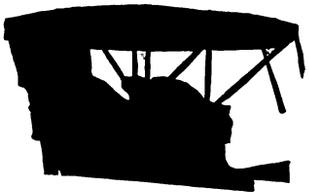
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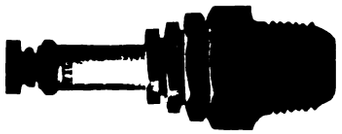
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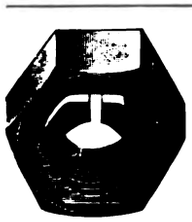
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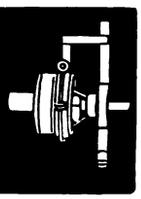


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NEW YORK GEAR WORKS.
56 GREENPOINT AVE., BROOKLYN, N. Y.

Empire Tires
WEAR LONGEST
EMPIRE AUTOMOBILE TIRE CO., TRENTON, N. J.
NEW YORK—148 Chambers St. and Broadway and 73d St. BOSTON—292 Devonshire Street.
CHICAGO—20 LaSalle Street and 1615 Wabash Avenue. BUFFALO—9 West Huron Street.
FOBES AUTO SUPPLY CO., Portland, Oregon. DENVER AUTO GOODS CO., Denver, Colo.
FOBES AUTO SUPPLY CO., Seattle, Washington. PENN AUTO SUPPLY CO., Philadelphia, Pa.
WAITE AUTO SUPPLY CO., Providence, R. I.

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FRANKLIN Automobiles

No wonder heavy automobiles are losing favor. The extra weight is no longer needed.

Excessive weight belongs to the early experimental days. There is no excuse for it in a modern built automobile. It is a defect and a drawback, and unreasonably expensive.

We recently weighed nine different makes of 5-passenger water-cooled automobiles. The average weight was a third more than that of the 5-passenger Franklin Type D.

None of these machines has more strength, or more carrying ability than Type D. But their extra weight required a third more power to do the work; 37 horse-power to do what Type D does with 28 horse-power.

Type D weighs only 2200 pounds; Type C Touring-car 1600 pounds; and Type H six-cylinder, 7-passenger touring car 2600 pounds. The average six-cylinder, 7-passenger automobile weighs about 4000 pounds. Think of the difference that makes in gasoline consumed and tires worn out.

The light-weight Franklins are economical; and they are easy to handle and comfortable. You get the full benefit of them.

Before buying any automobile see it weighed on the scales, with your own eyes; and compare it with a Franklin of similar passenger capacity.

The weight question is a vital one.

Write for the catalogue describing Franklin Models.

H. H. FRANKLIN MFG. CO., Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers.

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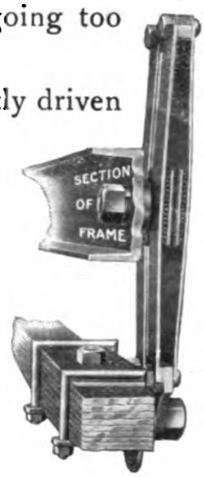
GABRIEL AUTO ACCESSORIES

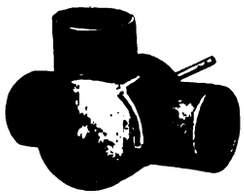


The Gabriel Exhaust Horn adds tone to the car in more ways than one. Their practical value for necessary warnings is greater than any other because of their carrying power and the tone being musical warns without startling. Can be attached to any type of steam or gasoline cars or motor boats regardless of size or number of cylinders.

The principle on which Gabriel Shock Absorbers are built is the simplest of any made. They permit a free and natural play of the springs while riding over slight inequalities and by opposing friction in exact proportion to the heavier shocks or jolts prevent the springs from going too far up or down; stopping them gradually without shock.

Gabriel Shock Absorbers were used upon the Oldsmobile "MUDLARK" recently driven by Mr. Ralph Owen from New York City to New Orleans, who says of them: "On my last year's trip I broke sixteen springs. This year while I have driven over even worse roads, I have not broken a single spring. Before starting I had the car equipped with Gabriel Shock Absorbers and haven't had any trouble at all."





The Gabriel Cut-Out by relieving the engine of back pressure caused by the muffler increases the working power available in hill climbing, speeding or on heavy roads.

If you will specify these Gabriel Auto Accessories for you 1908 Car, you will be sure to have the best.

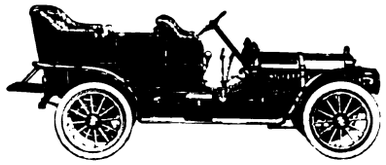
Ask your dealer or write for booklet.

GABRIEL HORN MFG. OO., 1417 E. 40th St., Cleveland, O.

National

Motor Cars

are a combination of all that has proven best in Modern Motor Car Construction. They are built of the best material money will buy.



Model K—4-cyl., 4⅞x5 $3500

Model R—6 cyl., 4½x4¾ $4200

Model N—4 cyl., 5x5 $3700

Model T—6 cyl., 5x5 $5000

Write for Particulars

National Motor Vehicle Company
1007 East 22d Street
INDIANAPOLIS, - IND.

The Largest Automobile Supply House in America

The Miller Speedmeter

The Miller Speedmeter is the simplest and most compact, durable and accurate speedmeter on the market. It works on the principle of centrifugal force. The entire governor mechanism is constructed from tool steel. It is arranged for adjusting the tension of springs at all speeds, and with this special constructed governor and spring adjustment, the springs are made and adjusted to show all speeds with absolute accuracy.

Rate of Speed—We wish to call particular attention to the fact that the Miller Speedmeter will register correctly at a low rate of speed, and the hand does not bob around or fluctuate when running at slow speed.

Flexible Shaft—The flexible shaft used in this instrument is made from tool steel and each link hardened separately before assembling. The cost of this shaft is more than four times that of the wire shafts generally used.

Driving Gears—The Miller Speedmeter is fitted with crown gears with an universal attachment, which permits of the instruments being attached to any style of car on the market.

Distance Traveled—The Miller Speedmeter is fitted with an odometer, which registers the distance traveled in miles. and has total and trip dials.

Finish—The material, workmanship and finish of the Miller Speedmeter is not excelled, if equalled, by any other speed indicator on the market. Each instrument is carefully tested on a special constructed testing machine before leaving the factory, and

Is Guaranteed for One Year.—The price of the Miller Speedmeter complete, including odometer, with dial registering 60 miles per hour, $50.00.

AGENTS WANTED EVERYWHERE—We give a large discount to manufacturers, jobbers, agents and dealers in automobile supplies.

Manufactured by the **MILLER SPEEDMETER CO. (Incorporated), 15 Herman Street, Worcester, Mass.**

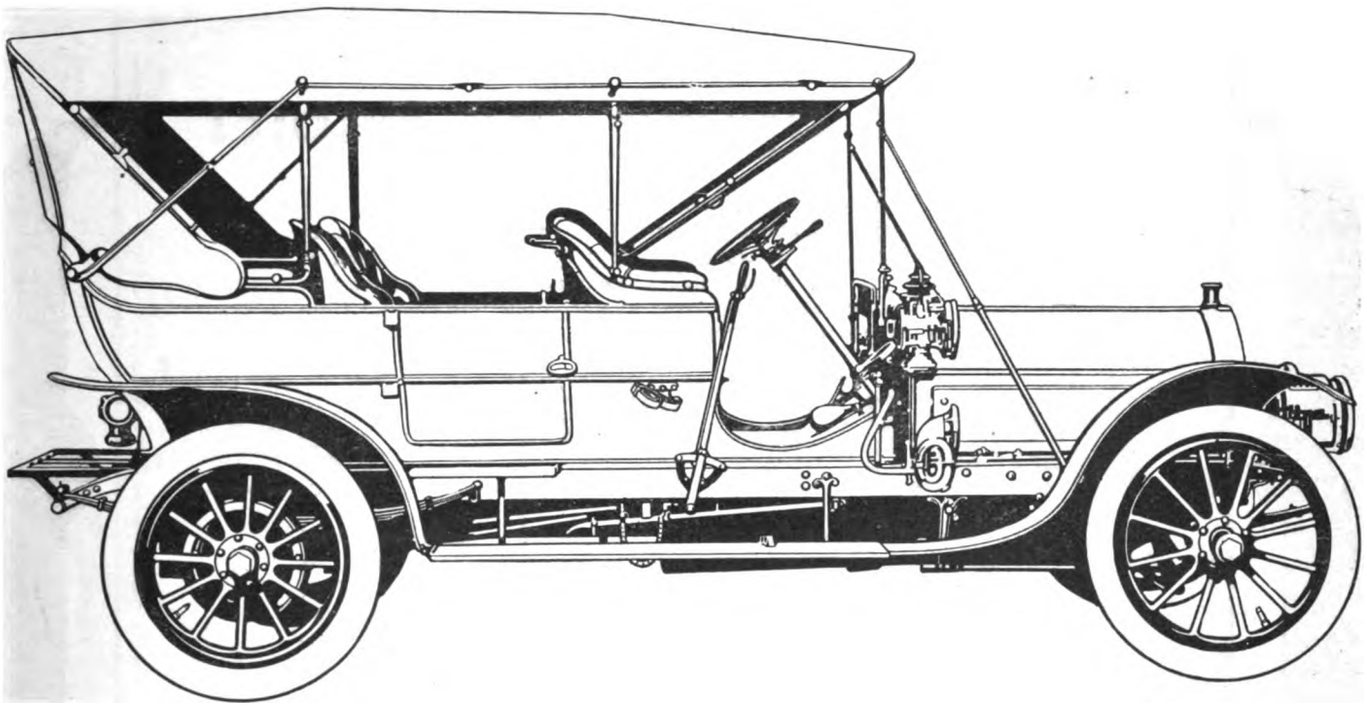
CHAS. E. MILLER

Manufacturer, Jobber, Exporter and Importer

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The SIX-Cylinder GREAT ARROW in Theory and Practice

Some one has said that a theoretical man, if asked to draw an elephant, would evolve one from his own inner consciousness, while a practical man would go to a zoo and look at one.

In the same way it is possible for the man of a mechanical turn of mind to demonstrate to himself that six cylinders are better than four in producing an even running, silent and flexible car, but even that is not so convincing as actually riding in a six-cylinder car. No description of the effect of riding in the six-cylinder GREAT ARROW is so complete as that it is like coasting downhill with the motor stopped and the clutch throw out. IT IS GLIDING. You feel that the car is propelled by some irresistible force outside of it rather than by the machinery that is inside of it. This is the effect of the perfect balance of a six-cylinder engine as compared with a four. The Pierce GREAT ARROW for 1908 comes as near the poetry of motion as it seems possible for machinery to come.

HERE ARE THE 1908 TOURING CARS

4-cylinder Great Arrow, 30 H. P., Price, $4,000
4-cylinder Great Arrow, 40 H. P., Price, $5,000
6-cylinder Great Arrow, 40 H. P., Price, $5,500
6-cylinder Great Arrow, 60 H. P., Price, $6,500

THE GEORGE N. PIERCE COMPANY, (Members Association of Licensed Automobile Manufacturers) BUFFALO, N. Y.

PIERCE DEALERS

Boston, Mass.	J. W. Maguire Co.	745 Boylston Street	Mexico City, Mexico	Mohler & De Gress	la Independencia 12
New York, N. Y.	Harrolds Motor Car Co.	233 West 54th Street	Milwaukee, Wis.	American Auto. Co.	187 Wisconsin Street
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Seattle, Wash.	Broadway Auto. Co., Inc.	Madison St. and Broadway	Providence, R. I.	Foss-Hughes Motor Car Co.	512 Industrial Trust Bldg
Los Angeles, Cal.	William E. Bush.	1227-29 South Main Street	Rochester, N. Y.	U. S. Auto. Co.	21 Plymouth Avenue
Baltimore, Md.	Southern Auto. Co.	1200 Mt. Royal Avenue	Salt Lake City, Utah.	Tom Botterill Auto Co.	62 W. Third. South
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Cleveland, Ohio.	Metropolitan Motor Car Co.	Euclid Ave and E. 19th St.	Springfield, Mass.	E. R. Clark Auto. Co.	461 Worthington Street
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Denver, Colo.	Tom Botterill	1643 California Street	Toronto, Ont.	Auto. & Supply Co., Ltd.	24 Temperance Street
Detroit, Mich.	J. P. Schneider	187 Jefferson Avenue	Troy, N. Y.	Troy Auto. Exchange	22 Fourth Street
Hartford, Conn.	Miner Garage Co.	High & Allyn Streets	Binghamton, N. Y.	Binghamton Motor Co.	172 State Street
Houston, Texas.	Houston Motor Car Co.	Prairie Ave and San Jacinto St.	Mobile, Ala.	So. Automobile Co.	105 S. Conception Street
Kansas City, Mo.	Palace Auto. Co.	1408 Walnut Street	Omaha, Neb.	H. E. Frederickson	2046-2048 Franklin Street
Louisville, Ky.	John Mason Strauss	3d and Chestnut Sts.	Richmond, Va.	B. A. Blenner	1607 West Broad Street

Paris, France, N. S. Goodsill (parts only), 22 Avenue de la Grand Armee.

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Get The Specifying Habit!

There is a growing disposition on the part of motorists and dealers to specify tire equipment on their cars. In other words, the man who pays the tire bills is coming to want his say as to the kind of tires he pays for. Our attention has been called to this matter particularly of late because of the large number of letters coming from dealers and owners in which the statement is made that

MORGAN & WRIGHT TIRES

have been specified on car orders. Some of these parties—most of them, in fact—have used our tires before, but not a few of them are converts to good tires thru the excellent service given to some of their friends. A New York dealer says: "Have instructed the factory to equip cars with M. & W. tires always, unless otherwise instructed." It seems to be a case of "specifying what you want when you want it." GET THE HABIT.

MORGAN & WRIGHT, DETROIT

Branches, Agencies or Dealers Everywhere

Studebaker

Safe: The margin of safety is ample for all emergencies.

Sane: The Garford chassis used, perhaps more than any other, represents the highest attainments of the **orthodox** art.

Three Gasoline Models:

Two "30's" and a "40"

STUDEBAKER AUTOMOBILE CO., South Bend, Ind.

Member Association Licensed Automobile Manufacturers.
General Office, Cleveland, Ohio.

Triumph Grease, What Is It?

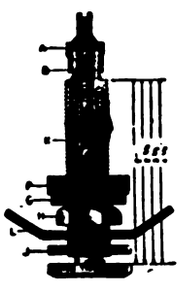
¶It is the newest production of auto grease, and benefitting by the experience of other makers, we have produced the best one yet. ¶We do not imitate any one, nor follow any other maker's plans. Our grease is spongy when made—it is spongy all the time, but it does not melt or run out. ¶It never gets hard or stiff so that it will not do its work properly—no matter how cold the weather is. It is made of the purest and best lubricants to be found, and compounded in such a manner as to produce what the auto user has long wanted. ¶A grease that will lubricate from start to finish, and will last long enough to pay for the trouble of putting it in the machine, and then staying right there like a good clerk attending to its own business constantly, and does not need punching up and renewing every few days, and leaves the machine clean and not all grease when through using it. ¶It is the red thorn in the side of the old fogy grease, or the non-fluid oil makers. It is always RED. No other grease like it, and it is not like any other grease. So we are not imitators in any sense of the word. ¶Buy it, and try it, and if not all we claim for it, any dealer will refund all expense it has been to you.

The Perfection Grease Company, South Bend, Ind.

ESTABLISHED 1844

SCHRADER UNIVERSAL VALVE

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires.

¶ Our No. 777 Motor Tire Valve is the standard for 2½ inch and 3 inch Tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

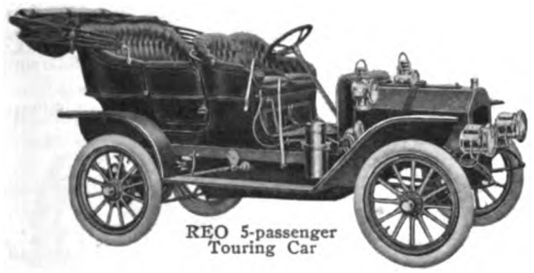
Manufactured by **A. SCHRADER'S SON., Inc., 28-30-32 Rose St., New York**

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REO

Just Your Style

Whatever you want a motor car for—touring, speeding, climbing, or all-around everyday service—there's a REO just fitted for the work.



REO 5-passenger Touring Car

The REO Touring Car, $1,250

A big, roomy, powerful car, quiet, smooth-running, and easy-riding. Carries five people over all sorts of roads with a steady reliability that you can count on to the journey's end.

Handsome, stylish, thoroughly up to date. The winner of cups and trophies from cars of double and triple its price, in every sort of contest.

The REO Runabout, $650

A handy, speedy, spunky little car for everyday use that carries four passengers. Back seat folds down and leaves plenty of carrying space. Wonderfully reliable and economical. Carried four people 682 miles for $3.38 per passenger in the New York Motor Club's six-day economy test. Strong, able and stylish.

There are those who declare it is "too much for the money."



The REO Runabout



The new REO Roadster

The REO Roadster, $1,000

The car for speed. Actually goes 45 miles an hour. Carries two passengers, with a trunk box in the rear convertible into a seat for two more passengers.

Provided with ample carrying space. Its racy lines and beautiful finish combine to make it the "sportiest thing on wheels."

And every one of these REOS does the work of cars that cost twice the money to buy and to operate.

Write for the new REO catalogue that tells you why.

R. M. OWEN & CO., Lansing, Mich.

General Sales Agents for REO Motor Car Company

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One Price for Warner Auto-Meters

NEVER, until this year of 1908, has there been a speed indicator sold at one absolutely fixed list price. Manufacturers have "named" a list price and some even required the dealers to sell at "that" price.

Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also — and the jobber cut the price.

Then there was fun in the camp. That hurt us — it hurt the dealer, too.

Then, in his haste to close a sale, the jobber would let wrong gear ratios go out — that hurt the consumer, the dealer and ourselves. For the jobber knows no law.



So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

THIS STAND IS POSITIVE.

Warner Instrument Co.
143 Wheeler Ave., Beloit, Wis.

AJAX WRAPPED TREAD TIRES



GUARANTEED FOR 5,000 MILES RIDING

What stronger proof could there be of Ajax Material and Workmanship?

Write for copy of guarantee, stating what size tire you are using. Address Dept. A.

AJAX-GRIEB RUBBER COMPANY

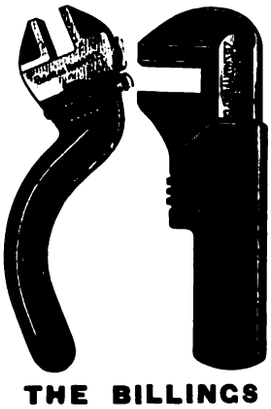
Gen'l Office, N. Y., N. E. cor. 57th St., and Broadway

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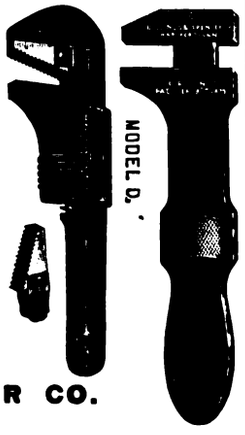
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CHICAGO:
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SEATTLE:
1102 Broadway.
SAN FRANCISCO
460 Golden Gate Ave.
LOS ANGELES:
1040 S. Main Street.

Agents in all large cities.

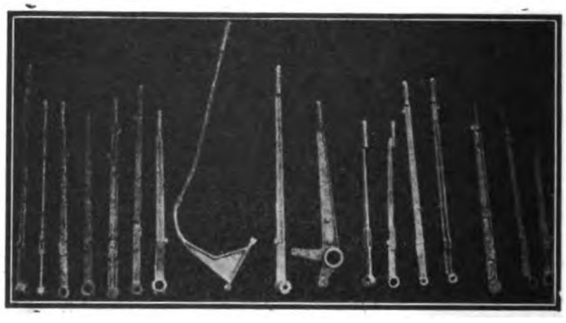


Our new
1908 Catalog
of
Auto Tools
and
Forgings
mailed gladly.
Write for it now.

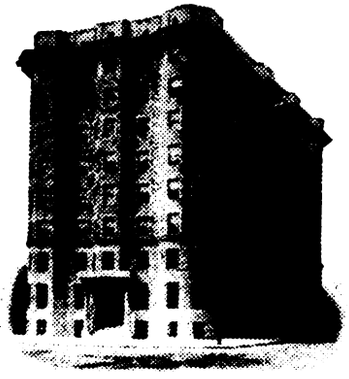


THE BILLINGS & SPENCER CO.
HARTFORD, CONN.

PARSONS' MANGANESE BRONZE LEVER CASTINGS



Sole Makers
THE WILLIAM CRAMP & SONS SHIP & ENGINE BUILDING COMPANY, - Philadelphia, Penna.



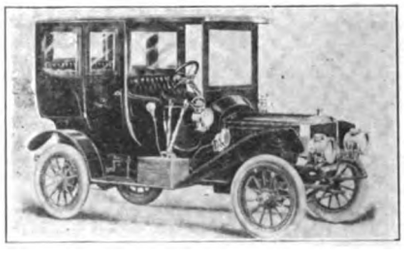
Hotel Tuller

New and Absolutely Fireproof.
Adams Ave. & Park St.
DETROIT, MICH.

AUTOMOBILE HEADQUARTERS

In center of Theatre, Shopping and Business district.
Club Breakfast, 40c up
Luncheon, 50c
Table De Hote Dinner, 75c
A la Carte Cafe Grill Rooms
EVERY ROOM WITH BATH
Rates $1.50 per Day up.
L. W. TULLER Prop.
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AUTOMOBILE BODIES



TWO FACTORIES

Large Contracts for entire outputs. Specially equipped for Limousine and all other high-class enclosed work.

Output for this season, 9,000 jobs, complete, trimmed and finished

RACINE NOVELTY MFG. COMPANY, Racine, Wis.

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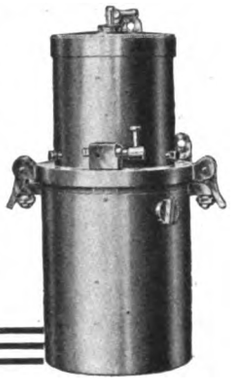


SOLAR Gas Generators

have the only perfect and scientific principle for the generation of Acetylene Gas.

Solar Generators are made from seamless drawn Brass Shells of heavy gauge.

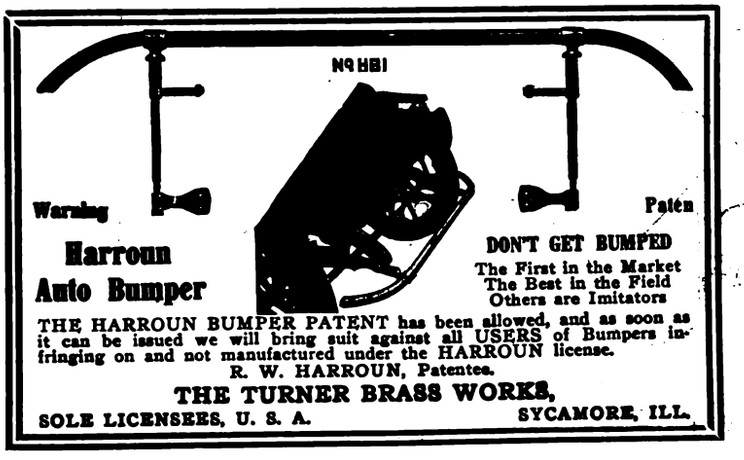
This construction feature entirely overcomes the possibility of leakage, which is so apparent in models where seams are soldered. They are easily charged and recharged and they employ the only practical and scientific principle for the generation of acetylene gas. Even when manufacturers equip with Lamps not of our manufacture—they use SOLAR GENERATORS.



Badger Brass Mfg. Co.

Two Factories

KENOSHA, WIS. 436 11th Ave., NEW YORK



Harroun Auto Bumper

DON'T GET BUMPED

The First in the Market
The Best in the Field
Others are Imitators

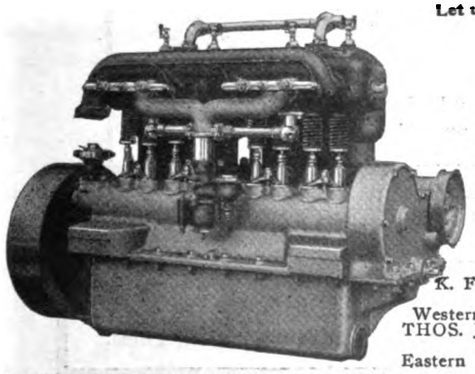
THE HARROUN BUMPER PATENT has been allowed, and as soon as it can be issued we will bring suit against all USERS of Bumpers infringing on and not manufactured under the HARROUN license.

R. W. HARROUN, Patentee.

THE TURNER BRASS WORKS,

SOLE LICENSEES, U. S. A. SYCAMORE, ILL.

CONTINENTAL MOTORS ARE STANDARD



Let us quote you on 4-cylinder motors for 1908

THREE SIZES

4¼ in. x 4½ in.
4¾ in. x 5 in.
5 in. x 5 in.

4-cylinder with self-contained oiling system.

Motors are ready for coupling any standard magneto.

Our new factory and machinery enable us to guarantee quality and deliveries. Also clutches and transmissions. Send for catalogue.

K. FRANKLIN PETERSON,
166 Lake St., Chicago, Ill.
Western Representative

THOS. J. WETZEL,
29 W. 42d St., New York.
Eastern Representative.

CONTINENTAL MOTOR MFG. CO., Muskegon, Mich.

The Car You Can Afford to Buy and Keep

is the Mitchell.

—Because it is moderate in **price** ($1.000 to $2,000).

—Just as stylish, handsome and well finished as **any** car.

—And is perfect in each **detail** of construction.

—Doing just as well on the road and **standing up** to **wear** and **tear** just as well as the **extravagantly high-priced** cars.

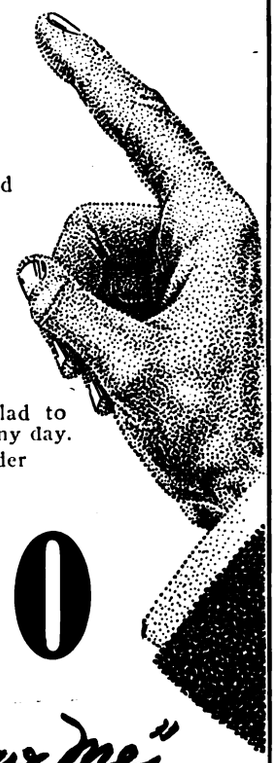
Know this for **yourself,** Mr. Business Man.

Get **demonstrations** of the high-priced cars.

Then form **your** opinion in a demonstration of the **Mitchell.**

The Mitchell agent will be glad to take you out for 50 or 100 miles any day.

Call him up—you are placed under no obligation.



$2000

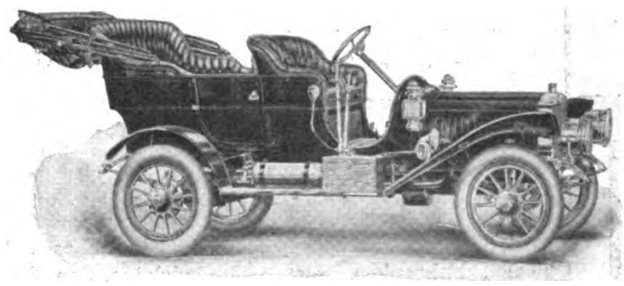
Just say "Show me"

He'll answer with the **car**—show you a **"silent** argument" that will convince you.

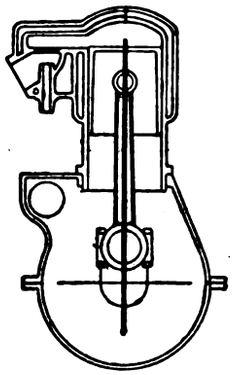
Write for letters proving that the Mitchell is the most economical car to **operate,** and for catalog No. 18, picturing and describing the Mitchell Touring Car $2,000, Limousine $2,800, Roadster $1,250 and Runabout $1,000.

Touring Car shown here—5 passenger, 35 h. p., 4 cylinder, speed 50 miles, finished in Mitchell blue—a very neat and extremely desirable car from radiator to tail light.

Mitchell Motor Car Co., 280 Mitchell St., Racine, Wis.

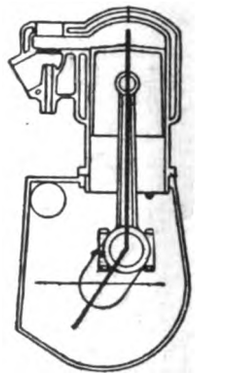


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Crank Shaft on Center

Rambler



Crank Shaft Offset

Why the Offset Crank Shaft

One of the greatest improvements in motor construction is the offset crank shaft. Its advantages are positive and direct.

First—By practically eliminating the dead center the efficiency of the motor is greatly increased through the greater leverage and more direct thrust from piston to crank shaft.

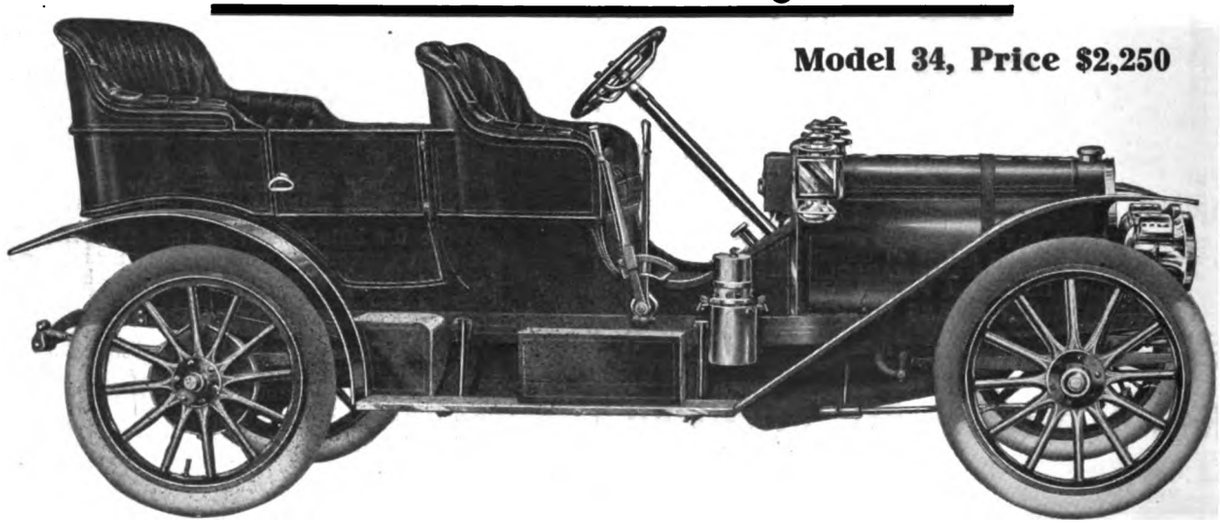
Second—Increased life of the motor through reduction of side thrust on cylinder walls and consequent saving in wear.

Third—Reduction in vibration and increased steadiness of running through more direct application of power generated in the cylinders.

Like many other fundamentally good features this must be done right and in the Rambler it is right both theoretically and practically and the result is a motor that combines the highest degree of efficieny with long life and economy of operation.

It is this and other features of equal value that make

The Car of Steady Service



Model 34, Price $2,250

This four cylinder chassis, equipped both as a 5-passenger touring car and 3-passenger roadster. Price of each style $2,250. The Rambler Utility Car with double opposed motor, $1,400.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wisconsin

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, Philadelphia, San Francisco. **Representatives in all leading cities.**

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, March 12, 1908. No. 24

DARRACQ GOES ON THE ROCKS

Creditors of the Company Make Damaging Allegations Against It—Liabilities Reported to Aggregate $100,000.

Closely following the failure of the Mercedes Import Co., another of the importing houses, the Darracq Motor Car Co., New York was petitioned into bankruptcy on Friday last, 6th inst. The petitioning creditors and the amounts of their claims are: Cole & Woop, $68 repairs; Gotham Rubber Co., $25 rubber coats, and Samuel H. Shaw, $513 commissions on sales of automobiles. They alleged that the company is insolvent, had paid out money to several creditors on antecedent indebtedness, and made transfers of property, amounting to more than $2,000.

Judge Holt, of the United States District Court, appointed Lindsay Russell receiver, with a bond of $50,000. It was stated in the application for the receiver that the company has automobiles on hand valued at $75,000, separate parts and accessories, $18,000; machinery, tools and fixtures worth several thousand dollars. It is said that business has been dull for some time past and the officers became tired of putting up any more money to carry on the business. The liabilities are reported to be $100,000.

After the receiver was appointed, the attorney for E. Lamberjack & Co., the Michelin representatives, said that several days before he obtained a judgment against the Darracq company for $2,088 for tires, and execution has since been issued to the sheriff. After the suit had been commenced the company produced a bill of sale of different cars to the New Amsterdam National Bank for $1 and other consideration.

It is said that the bill of sale was filed on January 28 and covered 12 automobiles—ten in this city, one in Chicago, and one in bond. It is also reported that the company owes the New Amsterdam National Bank $11,000. When a deputy sheriff made a levy on the office furniture at 1989 Broadway, he found six automobiles there, which it is claimed are those included in the bill of sale to the New Amsterdam National Bank.

The Darracq company was incorporated under New York laws on January 12, 1906, capital stock $100,000, which was reduced to $50,000 on April 6, 1906, to take over the automobile branch of the business of F. A. La Roche & Co., and to handle a car formerly used by the American Darracq Automobile Co. G. M. McWilliams was president, C. D. Wilder, treasurer, and Ben Wood, secretary.

Flanders Acquires Interest in Wayne.

W. E. Flanders and Thomas Walburn, respectively general factory manager and general superintendent of the Ford Motor Co., Detroit, have resigned those positions. Flanders has acquired an interest in the Wayne Automobile Co., also of DeDtroit, of which he has been made general manager, B. F. Everitt, who long had occupied that office, having been elected president. It is stated that fresh capital has been put into the Wayne company and that plans are afoot for the production of automobiles "on a scale heretofore unattempted."

Standard Welding to Make Midgley Rims.

On or about May 1st next, the Standard Welding Co., Cleveland, Ohio, will begin the manufacture of the well known Midgley rim, their ample facilities and long experience abundantly qualifying them for the work. The arrangement to that end has been made with the several constituent tire concerns of the Rubber Mfg. Co., viz.: the Hartford Rubber Works Co., Morgan & Wright and the G & J Tire Co.

Doherty Leaves Corbin for Cameron.

H. W. Doherty, formerly of the Corbin Motor Vehicle Corporation of New York, has been appointed sales manager of the Cameron Car Co. He will be located at the Beverly, Mass., factory, but will have direction of the Brockton product in addition to his duties in connection with sales.

HIGH FINANCE INVOLVES A MAKER

New York Car & Truck Co. Fails—Relation with Allen-Kingston Said Not to Affect that Company.

On Friday last, 6th inst., a petition in bankruptcy was filed here against the New York Car & Truck Co., manufacturers of railroad trucks and of the Allen-Kingston automobile at Kingston, N. Y., by these creditors: Harry J. Schnell, New York, $61,500 for loans; Carl Coonley, Port Richmond, Staten Island, $5,000 loans, and Colby N. Chester, Jr., New York, $1,768 for merchandise.

It was alleged that the company is insolvent, made preferential payments of $2,702 to twelve creditors, and admitted in writing inability to pay debts. The board of directors held a special meeting on March 4 and authorized the vice-president, Daniel G. Bogart, to admit inability to pay debts, and willingness to be adjudged bankrupt, as the company is hopelessly insolvent. Mr. Schnell holds ten notes of the company for his loans, and of these notes $22,000 are now due. Judge Holt appointed Robert Wilkinson of Poughkeepsie, receiver and authorized him to continue the business for 20 days.

It was stated that the assets were about $75,000, consisting of manufacturing plant, raw material, such as steel and iron, automobile chasses and parts, car trucks and parts, special tools and machinery and a few hundred dollars in bank. The company has eight or ten automobiles partly finished all of which, it is said, have been sold at good prices, when completed.

The company was incorporated under the New Jersey laws May 5, 1906, with capital stock $2,500,000, but had no rating at Bradstreets. It succeeded to the business of the Peckham Mfg. Co., which was put into bankruptcy on January 15, 1906. Orlando F. Thomas, one of the high financiers of the Morse-Heinze-Thomas group, whose

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operations precipitated the recent panic was president of the New York Car & Truck Co.

The fact that the New York Car & Truck Co. performed the actual production of the Allen-Kingston automobiles, made it appear that the Allen-Kingston Motor Car Co., was affected or would become involved in the failure. Walter Allen, of the Allen-Kingston company, states, however, that this is not the case. He says that the latter concern paid for the labor, rent, etc, for producing their automobiles, and also advanced large sums of money to the embarrassed company, which loans are, however, secured by a bank's guarantee. Allen stated further that Orlando F. Thomas has no present connection with the Allen-Kingston company, which is contrary to the general impression that not only Orlando F., but E. Russell Thomas and others of their financial intimates were heavily interested in the concern.

E. V. Receivers' Report for February.

According to the report of the receivers, filed in court, the sales of the Electric Vehicle Co., Hartford, Conn., from February 1 to March 1, amounted to $16,880.43; and the purchases to $3,549.94. Cash on hand February 1 was $21,951.44; collected on Electric Vehicle account, $4,149.19; collected on receiver's account, $15,765.36; collected on Selden royalty, $1,335.74; total, $43,201.73. Disbursements were: Pay-roll, $6,677.89; Association Licensed Automobile Manufacturers, $806.82; traveling expenses, $196.12; insurance, $1,022.12; appraisers' salaries, $2,000; purchase creditors, $1,534.93; petty expenditures, $265.64; services of clerks, stenographers and office boys from December 1 to 10, 1907, $641.31; total, $13,144.83; cash on hand, $30,056.90.

Incorporates to Make Two Cycle Motors.

With $50,000 capital stock, the International Motor Co. has been incorporated at Detroit to manufacture a two cycle motor designed by Philip S. Claus, formerly with the Northern Automobile Co., and later with the Cadillac Motor Car Co. The company has purchased the factory at 868-890 Military avenue, with a lot 150x300 feet and railroad siding, and a factory space of 20,000 square feet. Machinery is being installed and it is stated the company expects to employe about 75 men. The officers of the company are: President, X. B. Konkel; vice-president and general manager, Philip S. Claus; treasurer, Alexander Lemke, and secretary, John Lesinski.

Diamond Branch in New Store.

The Diamond Rubber Co.'s Pittsburg branch heretofore located at 16 Wood street, has been removed to fine new store at 6122 Center street, East End., in the same city, of course. The new place was specially appointed for the Diamond company's occupancy, and contains all modern conveniences.

The Week's Incorporations.

Milwaukee Wis.—Commercial Auto Co., under Wisconsin laws, with $15,000 capital. Corporators—Oscar Eskuche, Mitchell Mackie and H. W. Eskuche.

Milwaukee, Wis.—Power Vehicle Co., under Wisconsin laws, with $25,000 capital. Corporators—George L. Stephenson, John H. Valentine and T. C. Clarke.

Detroit, Mich.—International Motor Co., under Michigan laws, with $50,000 capital; to manufacture motors. Corporators—X. B. Konkel, Philip S. Claus, Alex Lemke and John Lesinski.

Atlanta, Ga.—Motor Omnibus Co., under Georgia laws, with $40,000 capital; to operate motor stage line. Corporators—Herbert R. Brown, Macon and Judge S. S. Yodr, Washington, D. C.

Hoboken, N. J.—Mutual Taxicab Co., under New Jersey laws, with $125,000 capital; to conduct a general electric cab service. Corporators—A. V. Jones, H. M. Browne, F. W. Mills, New York City, N. Y.

New York City, N. Y.—Knickerbocker Taxicab Co., under New York laws, with $15,000 capital. Corporators—William B. Hurlburt and Sanford J. Wise, 1540 Broadway; Stuart H. Elliott, 1183 Broadway, New York City.

New York City, N. Y.—Belmont Garage, under New York laws, with $4,400 capital. Corporators—William Hirsch, 115 East Eighty-third street; Julius Wolf and Irving Wolf, 1239 Madison avenue, New York City, N. Y., directors.

Philadelphia, Pa.—American Auto-Drive Co., under Pennsylvania laws, with $10,000 capital; to manufacture automobile parts. Corporators—Walter O. Foss, George Link, Frederick C. Brunhouse, Philip C. Lang and Ralph E. Brunhouse.

Salt Lake City, Utah—Seeing Salt Lake City Cars & Automobiles, under Utah laws, with $30,000 capital; to operate automobile line. Corporators—L. C. Mariger, president; L. S. Mariger, vice-president; M. E. Christopherson, secretary-treasurer.

New York City, N. Y.—Jones Taximeter Co., under New York laws, with $10,000 capital. Corporators—Joseph W. Jones, Broadway and Seventy-sixth street; Raymond M. Owen, 1759 Broadway, New York City; Roy A. Rainey, Lakewood, N. J.

New York City, N. Y.—Metropolitan Taxicab & Auto Service Co., under New York laws, with $100,000 capital; to deal in automobiles and to manufacture all vehicles. Corporators—J. W. Cummin, L. G. Hall, and E. True, all of New York City.

In the Retail World.

W. E. Rudy has disposed of his holdings in the Majestic Automobile Co., Lima, O. Lee Beeler has succeeded Rudy.

The Orlando F. Weber Co., one of the earliest and best known of Chicago's large colony of dealers, is in the hands of a receiver.

H. B. Payne moved into his new Suburban Garage at 1624 Maple avenue, Evanston, Ill., this week. Storage, repairing and charging will be his specialty.

The Evanston Auto Co., Evanston, Ill., is located at 1024, 1026 and 1028 Davis street. A complete electric charging station is a feature of the new, commodious brick garage.

Monterey, Mexico, is to have a garage, although the exact location has not been chosen. Juan Forseck and John Austin will finance the venture. The Reo will be handled.

The Sears-Nattinger Automobile Co., Des Moines, Iowa, which occupied the premises at 812-814 Walnut street, has moved into its new garage at Tenth and Locust streets.

Fire from an unknown cause destroyed two cars in the garage of the George Abel Electric Transfer Co., Seventh avenue and Thirty-seventh street, New York City, Friday last, 6th inst. The loss is estimated at $6,200.

Robert Brunson is remodeling the old two story building at Milwaukee and River streets, Elgin, Ill., for use as an automobile garage. Following its completion he will move from his present location at 381 Spring street.

The Hayes Rubber Co. is the style of a new concern which has commenced business at 57 Warren street, New York. In addition to tires, it will handle a full line of automobile accessories. The head of the concern is F. P. Hayes, formerly secretary of the Pennsylvania Rubber Co. of New York.

Rubay Fails After Selling Boston Branch.

Peter Zucker was yesterday appointed receiver for Leon Rubay, Inc., New York, who dealt chiefly with imported accessories. The petitioning creditors alleged that the corporation was insolvent and had admitted in writing its inability to pay its debts. Its assets are placed at $4,000. Previous to the failure, the Rubay branch in Boston, had been taken over by the Percy Ford Co., a $1,000 company formed for the purpose under New York laws. Ford himself already was connected with the Rubay establishment.

No New Manager Yet for A. L. A. M.

The meeting of the executive committee of the Association of Licensed Automobile Manufacturers, held in New York yesterday, adjourned without result. No successor for General Manager Budlong's office was chosen. It was known several weeks ago that the position was tendered Col. George Pope, of the Pope Mfg. Co., but Col. Pope has no desire to remove from Hartford, and therefore respectfully declined the offer.

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IMPORTANT PARTS STANDARDIZED

A. L. A. M. Adopts Uniform Sizes for Rods, Yoke Ends and Levers—Lucke Throws Light on Alcohol.

The meeting of the Mechanical Branch of the Association of Licensed Automobile Manufacturers, held in New York on Tuesday last, 10th inst., was one of the most interesting meetings of the Branch held since its organization. It being the first meeting held this year, many subjects, which special committees have been at work on, were reported and papers read. Incidentally, the annual election was held, all of the incumbent officials being unanimously chosen to succeed themselves, as follows: Chairman, A. L. Riker, Locomobile; secretary, C. F. Clarkson; metallurgist, Henry Souther; chairman test committee, H. E. Coffin, Thomas-Detroit.

A special committee appointed to work with the test committee toward the standardization of rod and yoke ends, made an elaborate report on what it considered the proper sizes for the standardization of these important parts of construction. Standards of 5/8, 5-16, 1/2 and 7-16 rods were adopted and will be known as the A. L. A. M. standard adjustable rod and yoke ends. Nearly every manufacturer of American automobiles, is, at the present time, using various sizes of rods and yoke ends and it was found that owing to the various sizes used, that there was considerable confusion in getting the proper sizes for immediate delivery. With the adoption of this standard, the manufacturers of rods and yoke ends will carry in stock a full line of the standards adopted so that users of the sizes which have been adopted may be able to buy in the open market such sizes necessary. This is of particular benefit to the user as the parts will be interchangeable, and the rods of one car will serve equally as well for another.

Another important standardization was that of levers. Various weights and sizes of levers have been used with a considerable expense, to those automobile manufacturers who do not have drop forging plants. Owing to their inability to buy stock levers, they must necessarily buy the dies from which these forgings were made and with the changing of the type or weight of the lever, new dies, at an increased expense, are necessary. After careful consideration the Branch adopted a uniform modified I beam lever, which the drop forge makers will carry in stock, making these levers interchangeable.

The committee appointed to report on the standardization of rims felt that the time was not ripe for a universal adoption of the standard rim, owing to the fact that it was impossible to tell whether the clincher or demountable rim would be in vogue. The use of spare wheels instead of demountable rims was given consideration and the Rim committee empowered to make further investigation on this matter:

At the afternoon session, Dr. Charles Edward Lucke of Columbia University, who has been making some very exhaustive tests with alcohol, as a fuel for internal combustion engines, delivered an address to the Branch. Dr. Lucke's remarks were principally in making comparisons in the tests he had made with the use of alcohol for gas engines for locomotion as compared to those for stationary use. He pointed out clearly to the Branch that with certain types of engines he could start with alcohol as easily as gasolene, by the use of a spray carburetter with the ordinary needle valve. He said that he did not feel that the time was opportune for a universal adoption of alcohol for practical use, especially in automobile engines, owing to the absolute necessity for a minute adjustment of carburetter and ignition which could not be had in automobiles, owing to the inexperience of many drivers and owners. The vagaries of alcohol as a fuel was clearly pointed out by Dr. Lucke, who explained that during his experiments conditions arose and developed to an amusing standpoint. One incident noted was that in his tests on a two-cylinder motor with crank case compression, he found that the excess vapor which had not exploded with the first charge on the in-take, escaped through the crank shaft and could be ignited. In many instances the vapor could be ignited at the exhaust. In nearly all his tests, however, a good consumption had been attained and the standard of thermal efficiency of the motor maintained.

E. R. Hewitt who has been experimenting with alcohol for commercial purposes gave some interesting data on the results of his work. Mr. Hewitt adapted an engine to the use of alcohol for a five ton truck. On gasolene with a full load, 4½ miles on a gallon of gasolene could be had. On using the motor without readjustment, only over two miles per gallon of alcohol could be gotten, but on raising the compression from 75 to 120 pounds, he was able to get over five miles to the gallon of alcohol. He pointed out that it was necessary in this case to place the carburetter as near the engine as possible in order that the mixture would be sent into the cylinder not less than 72 degrees. In cold weather he was able to overcome the loss in the vaporization by surrounding the intake pipes with the water jackets which kept an even temperature for the vapor until discharged into the cylinder. It was the consensus of opinion that for commercial work, alcohol in the near future would be the most economical fuel to be used.

An interesting lecture on the use of pyrometers for indicating and recording the heat temperature in treating steels was delivered by W. H. Bristol and Charles Engelhard.

BUFFALO'S BIGGEST AND BEST SHOW

Opening Attended by Crowd of Five Thousand—More than 150 Cars Staged Under Brilliant Canopy.

With a blare of welcome sounded by approximately 200 horns of as many degrees of power and tone, the siren chorus was the opening signal of the sixth annual show of the Automobile Club of Buffalo, in Convention Hall, that city, on Monday night, 9th inst. A crowd of about 5,000 persons crowded the hall on opening night.

The show is undoubtedly more impressive than any of the five exhibitions that preceeded it. Upwards of 150 cars, representing the standard makes, were staged under a canopy of blue and white bunting studded with thousands of white and colored incandescent lights, and fringed at the sides with a gold border and stars. Of the many exhibitors there are only three car manufacturers, these naturally being the big Buffalo concerns—the George N. Pierce Co., the E. R. Thomas Motor Co., and the Babcock Electric Carriage Co. The other exhibitors are local and branch agencies.

A new experiment is being tried this year with success. It consists of dividing the hall by four aisles, six feet each in width, instead of two aisles as formerly. This relieves the congestion to a noticeable extent and doubtless will make itself very necessary to-night (Thursday), when the largest crowd of the week is expected to attend. It will be known as "Boulevard night," when $1 will be charged every person who enters the hall, the entire proceeds to be devoted to the fund that is being raised to construct the boulevard from Buffalo to Niagara Falls.

Among the exhibitors are the following: Maxwell-Briscoe-Buffalo Co., Maxwell and Mora; George N. Pierce Co., Pierce Great Arrow; E. R. Thomas Motor Co., Thomas; Walter Hayes, Locomobile; Lewis & Linn, American; F. F. Rick & Co., R-S motorcycles; Meyer Carriage Co., Firestone Motor Buggy; Jaynes Auto Supply Co.; Neal, Clarke & Neal, Indian; N. S. U. and Racycle motorcycles; J. A. Cramer, Stoddard-Dayton and Mitchell; Centaur Motor Co., Cadillac, Oldsmobile, Peerless and Rapid; Co-operative Motor Co., Stevens-Duryea, Corbin and Lozier; Babcock Electric Carriage Co., Babcock; Louis Engle, Jr., Cartercar; E. E. Denniston, bodies and tops; O. L. Gooden Motor Car Co., Winton; Poppenberg Motor Car Co., Reo, Rambler and Premier; Empire State Tire Co.; Brunn's Carriage Manufactory, Pennsylvania and Pope-Waverly; Buffalo Automobile Exchange, Franklin; Diamond Rubber Co.

The trustee of the St. Louis Motor Car Co., Peoria, Ill., has declared a creditors' dividend of 15 per cent.

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An Unusual Proposition

ARE YOU AUTOMOBILE DEALERS MAKING MONEY?

If not, why not? Is it because your apparent profit is wiped out by after-sale contingencies? Is it because your business system is faulty, your methods disorderly and careless? Is it because you are located in a district where the line of cars you sell is not adapted or in demand? Is it because you are a skimmer, not doing the business seriously, as though you had no real place in business life? Is it because you consider the selling of automobiles a game rather than a business.

The fact that so large a number of retail automobile dealers are not making money, and I am happy to say that there are few Maxwell dealers among this class, is a matter of serious concern to those in the industry.

Now, you know me; you know that I must have a good deal of experience, that my plan of covering territory has been successful; that I know the business end of the automobile business; that my plans carry.

Now I have, like our friend from Boston, a remedy. Ha, ha, you say to yourself, pretty cute. He means to tell us to sell Maxwell Cars. Yes, that's part of it, but not the only part. I have deeper reasons.

To accomplish, I want first to get into communication with you, to become better acquainted. Let me send you The Co-Operator, our own automobile paper, free for three months. I will lead up to my plan in it. It will be a valuable educator, and in due course I will give you the complete details of my remedy.

Of course, The Co-Operator says a good deal about Maxwell Cars, but it has another mission to you. It will lead to a better understanding between us, so that later I can make you a lot of money.

Apropos of Maxwell dealers making money, it is because Maxwell Cars, while not yet absolutely perfect, are the nearest perfect, and because of their correct mechanical principles; unit construction; three-point suspension; natural water cooling; multiple-disc clutch; metal bodies; and all the other distinctive Maxwell features produce satisfied users, and every user becomes a salesman and a booster. Will you please cut out the blank below and send in at once? Let us begin the good work now.

Benj. Briscoe President.

Maxwell-Briscoe Motor Company

Members A. M. C. M. A.

P. O. Box 106

Tarrytown, New York

FACTORIES:

TARRYTOWN, N. Y. NEWCASTLE, IND. PAWTUCKET, R. I.

MAXWELL-BRISCOE MOTOR COMPANY, Co-Operator Dept. Tarrytown, N. Y.

Gentlemen:—Enter my name on free dealers' mailing list of The Co-operator.

Name of Dealer.....

Address .....

Notice This in no way carries with it the slightest obligation, but I do it simply because Briscoe asks it and I want to be a good fellow.

THE INCOMPARABLE WHITE

THE CAR FOR SERVICE



The Touring Supremacy of The White

After a brief experience with the White, the average owner has gained such confidence in its supreme reliability and its ability to traverse any sort of road, that he plans his tours without any thought as to whether the roads are good, bad or indifferent. He knows that his tires will last much longer than on any other car of similar size or power. He is independent of everything except an occasional source of gasoline supply.

As an indication of the ceaseless touring activities of White owners, it is significant that, in many remote regions of this country and of foreign lands, the people think that all automobiles are propelled by steam power. This conclusion is a natural result of their having seen no other automobiles but White Steamers.

The White Route Books, which give detailed road directions for important touring routes, will be mailed free on request.

THE WHITE COMPANY

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Philadelphia, 629-33 N. Broad St.
Boston, 320 Newbury St.
Chicago, 240 Michigan Ave.
Cleveland, 407 Rockwell Ave.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, MARCH 12, 1908

Condition of the Used Car Market.

Persistent rumors to the effect that former motorists who were hard hit, have been forced to dispose of their cars, or at least to offer them for sale at "panic prices," have given rise to the impression that the second-hand automobile market is glutted, that prices are down to the verge of nothing, and that there is absolutely no chance of disposing of a really good car at anything like a rational figure. Apparently this idea is more or less a part of the froth left by the ebb tide of financial depression, and like all froth, more or less unsubstantial.

Whatever may be the condition of the second-hand business in regard to stock on hand, it is a fact that prices asked have suffered little or no shrinkage since last fall, and that in so far as it is possible to co-relate prices and values in used machines, it is about as difficult to obtain a second-hand "bargain" as ever it was. While there may be, and doubtless are, many cars, the owners of which would like to dispose of them at substantial rates, and while shrewd buyers are making the most of the situation to drive sharp bargains, there is none of the raffling off at nominal sums, which might be supposed, judging by newspaper reports. The generally expected rise in price indicative of the coming, spring has not yet materialized, but there is no indication of an existing or probable slaughter, to cut into retail sales, or in any way diminish the value of automobiles as merchantable wares.

How Reputations are Hurt.

When a manufacturer has built up a reputation, naturally he is proud of it. Thereafter, if he is of the right sort, his greatest jealousy is to maintain it. Usually, the maintenance is more difficult than the acquirement of the reputation. For it is an axiom that success breeds imitation and though imitation may be the sincerest flattery, rarely is it relished and rarely does it serve the purpose of maintaining the proud repute of any article. Usually the chief virtue of the imitation is its price. It sells for less than the original and genuine article and because of the fact, it appeals to a very numerous class.

How greatly such manufacturing malpractice has served to injure the legitimate automobile interests is almost beyond speculation. These interests are so manifold and the satisfaction of automobile users rests in so many small things, that the wonder is that the imitators of well known accessories or of parts thereof have not worked more injury than has proven the case.

When a car or some part of its equipment requires repair or replacement is the time when the groundwork for such injury, which is another term for dissatisfaction, is laid, often unthinkingly laid. Too often the owner is intent on counting the cost; as often, the dealer or repairman is as intent on earning the handsomest possible profit. As a result, for the particular part of the equipment requiring replacement, and which always had served well, there is substituted something of slightly lessened cost. If trouble ensues, it is not always the case that the blame is placed where it rightly belongs. The entire structure may be damned and the reputation of its maker or of the maker of the particular apparatus which is charged with fault may suffer.

How true is this assertion, is well instanced by the case of a well known manufacturer of ignition apparatus. For months he had been receiving complaints of the faulty service of his product. He knew that the material and workmanship had been maintained at the same high standard that was responsible for the popularity of his output, and he was at a loss to determine the reason and cause of the very general damnation which was being visited on his goods. A searching investigation was the result, which disclosed that one of the smaller, yet most vital, parts of the whole, was being replaced, when it had been worn out from actual service, by a cheap substitute, improperly constructed, that was manufactured by a comparatively unknown firm. That the intent was to defraud, was evident from the fact that the cheap substitute was made to resemble the original in size and design, and so closely was the genuine copied that it was not detected by the manufacturer or his experts until an analysis of its component parts revealed the substitution.

Obviously this sort of thing works injury and annoyance to the manufacturer who must bear the brunt of the condemnation, and to the user of the device who fails to obtain satisfactory results, yet the latter is the real cause of the trouble, for by his policy of "penny wise, pound foolish," he makes possible the existence of individuals who live by preying on that portion of the community who strive to get something for little or nothing.

Mica Spark Plugs and Porcelain.

With the same determination to maintain their contention, that always is found when the advocates of an air cooled engine hear that type condemned by the water cooled votaries, the users of porcelain spark plugs are ever ready to assail the mica plug, and the enthusiasts of the latter type are equally willing to pick up the gauntlet; if indeed, they had not already thrown it down.

On the plug question, the users of the internal combustion engine have taken very determined stands. The contention is frequently advocated by those who use only the porcelain insulated plug that this type is far superior because of the facility with which the core may be made absolutely leak proof; and strangely enough the men who swear by the mica plug advocate the same argument in support of their claim that mica plugs give more satisfactory results than any other.

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Another point advanced in substantiation of the claims for the mica plug is that the core will not break; the retort is that if the porcelain is destroyed another can be immediately substituted in the old base, which may be used indefinitely; the substitution being possible if a spare porcelain is at hand; the "if" is important and probably has had much to do with the case. And so it goes on, each using the arguments of the other to support his claim.

Again, the theory has been advanced that in the high compression engine the intense heat generated in the cylinders will cause the porcelain insulation to crack; if this is true, then experience and a matter of economy prompts the use of mica, which is not affected by the heat. But on the other hand, the contention that the mica plug absorbs oil, which turning to carbon, short circuits the plug rendering it useless, argues that the cheaper of the two would be the porcelain, providing it has sufficient merit to justify its manufacture. But in justice to the mica type, it must be said that actual instances of this shortcoming are few and far between.

Pertinent to the discussion, however, is the fact that while porcelain plugs retain favor for automobile use, they now are rarely to be found in motorcycles; for the latter, the mica plug is well nigh universal.

However, as Sheridan says: "The quarrel is a very pretty quarrel as it stands; we should only spoil it by trying to explain it."

What right have the police to interfere with the success of garage-keeping? Why, a horde of blue coats actually swept down on a New Jersey garage and gathered in a collection of hard-working chauffeurs deeply busied in the ennobling occupation of "shooting craps," and an unfeeling judge fined the "shooters" $10 each. That sort of thing will not add to the popularity of any garage. The owner owes better protection to his hard working patrons and they should demand it!

Prepare for the millenium! A New York policeman actually has arrested a city official for violating the speed law. The policeman's name is Casey. It should be engraved in the policemen's hall of fame. It suggests that some day one of them may go so far as to arrest the grossest and most reckless of all speed violators—the delivery drivers for the newspapers, the editors of which forever are damning automobiles for the same offense.

MAKING WAR ON NON-SKID CHAINS

Officialdom in Several Cities Following New York Park Board's Lead—The Two Sides of the Question.

Official objection to the use of non-skid chains on the wheels of automobiles has cropped out in other cities than New York, where they first were excluded from the park roads and parkways.

"Let them keep the automobiles indoors when it is wet and icy," is the sentiment ascribed John Minwegen, vice-president of the board of local improvement in Chicago. Minwegen regards the use of chains on the wheels as a factor in the destruction of pavements that it is only fair to the tax payers to eliminate.

The commissioners of Fairmont Park, Philadelphia, have been receiving such reports of damage done to the park driveways by tire chains that a rule prohibiting their use is under consideration. Before adopting such a rule, however, they were willing to hear objections and on Thursday, 5th inst., they heard counsel for the Automobile Club of Philadelphia, the Automobile Club of Germantown and the Quaker City Motor Club. S. Boyer Davis spoke for the two organizations first named, G. D. Bartlett appearing for the other. Mr. Davis expressed the opinion that the reports made to the commissioners had been greatly exaggerated, and in concluding his argument he said: "It is my belief that the greatly increased traffic of all kinds in recent years has had more to do with the wearing out of the roads than have the chains. The tendency of the automobile is to roll the surface of the roads rather than to tear it up, and except when rounding a curve at high speed, or when coming to a sudden stop by the quick application of the brakes, there is no scraping motion beneath the wheels. Automobiles seldom stop in the park and the curves are usually taken at reduced speed, and therefore, in justice to both automobilists and the public, I, on behalf of the two motor clubs, would ask the committee to consider fully the dangers to be encountered from driving a motor car on a slippery street without some provision against skidding before a final decision in the matter is reached." Mr. Bartlett's argument was along similar lines and the commissioners appeared to be favorably impressed by what was said.

The chain question was discussed at the monthly meeting of the park board of Baltimore early in March and John S. Gittings, who declared in favor of excluding tire chains from the parks, did so on the ground that "the automobilists who use chains in driving through the parks are causing immense damage to the roads." He backed up his position by referring to the action of the park authorities in New York. General A. E. Booth defended the use of chains in bad weather on the ground of safety, but at the same time he suggested an extra tax on automobilists to pay for repairing the roads.

COMING EVENTS

March 7-14, Boston, Mass.—Boston Automobile Dealers' Association's annual show in Mechanics Building and Horticultural Hall.

March 9-14, Buffalo, N. Y.—Automobile Club of Buffalo's sixth annual show in Convention Hall.

March 15-April 1, Omaha, Neb.—Omaha Automobile Dealers' Association's annual show in the Auditorium.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-24, New Haven, Conn.—New Haven Automobile Dealers' Association's show in Music Hall.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

March 23-28, Indianapolis, Ind.—Indianapolis Automobile Dealers' Association's show week.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association's annual show in Duquesne Garden.

April 6, 7 and 8, Denver, Col.—Annual show in Mammoth skating rink.

April 6-11, New York City—New York Automobile Trade Association's carnival week.

April 24, Westchester county, N. Y.—Stock chassis race for Briarcliff trophy.

April 28, Norristown, Pa.—Norristown Automobile Club's endurance run to Lancaster, Reading and return.

May 5-6, Harrisburg, Pa.—Motor Club of Harrisburg's second annual endurance run.

May 16, Hartford, Conn.—Hartford Automobile Club's 200-miles endurance run.

Norristown to Hold Endurance Run.

The Norristown (Pa.) Automobile Club will hold its first endurance run on Tuesday, April 28th. The course will be from Norristown to Reading and thence to Lancaster and return. The rules are similar to those used in other endurance runs and provide for controls, involuntary stops of the motor, and for repairs to mechanism.

Kalamazoo Motorists Get Together.

Kalamazoo, Mich., now has an automobile club, organization of the Kalamazoo Automobile Club having been effected last week when 40 charter members elected these officers: President, James C. Hatfield; vice-president, Anthony S.Hill; secretary-treasurer, Donald C. Boudeman.

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BOSTON'S JAPANNED SHOW PROVES OF REAL IMPORTANCE

Decorations Distinctive and the Early National Shows Give Big Makers Time to Produce New Models—Surprising Number of New Cars in Evidence and a Wealth of Novel Accessories, Not to Mention the Candy and the Lemonade.

Japan is quite a few miles from the United States, and its connection with automobiles is exceedingly remote, but as applied by the Bostonese, a Japanese setting for an automobile show in the United States is not half-bad.

The fact was made evident when the Boston show in Mechanics building was opened on Saturday evening last, 7th inst. The Japanese archway—firecracker red in color—at the entrance, was not put into place until Monday, but within the Oriental trappings all had been hung. White and firecracker red constitute the color scheme. The first glimpse of it is had from beneath a long bower of purplish wisteria, which, hung here and there with Japanese lanterns, is in itself a pleasing picture. On either side of the bower, exhibits are located with backgrounds of red and white. Walls and posts are hidden by bunting of those hues, relieved occasionally by the flaming red sun of Japan or some other fanciful Oriental design. "Wisteria Walk" is situated in what is termed Exhibition Hall, in other parts of which there are other and smaller bowers, but hung not with the purple flower, but with wisteria in whites, pinks, and yellows. All walks, however, lead to Grand Hall, wherein the "air" of old Japan is strongest and wherein the fountain—aye! and such a fountain—plays as also does the women's orchestra—the leader garbed in crimson, the players arrayed in white.

In the heart of Yankeedom, where thrift and ingenuity go hand in hand, it is not strange that Manager Campbell and his Bostonese aides have on the occasion of this show, as on previous occasions, demonstrated that while other promoters have spent many thousands for the same purpose, they have been able to obtain original and distinctive effects at much less than half the usual cost. For while it is plain that the Japanese setting was not unduly expensive, there is no denying that it is not only original and distinctive, but effective.



MECHANICS BUILDING, WHERE THE BOSTON SHOW IS IN PROGRESS

Grand Hall is a semi-riot of white and fiery red, but withal it is not disturbing riotness. The ceiling is hidden by narrow drapings of white and red bunting, pinned in a common center by a huge gilded crysanthemum, or what is supposed to represent a chrysanthemum. Red festooned on white adorns the balconies, and over each exhibit is a Japanese arch of the same red, within which the sign, in white, is suspended. Each space, carpeted in sage green, is hedged from its neighbor by boxed shrubbery of a deeper green, while in the very center of the hall, a giant palm uprears itself. From the greenery at its base, the fountain—yes, it must be a fountain—plays—plays eight or ten thread-like streams suggestive of boys' squirt guns, or a needle bath.

The background of the stage is a painting representing a Japanese landscape, with the snow capped sacred mountain in perspective. At the sides of the stage is a bare suggestion of pagodas, and a touch of wisteria. The arches of the stage hold two gigantic painted dragons, each of which apparently is pursuing a Japanese lady angel, who in turn seems to be fleeing for escape to a fiery Japanese sun.

Above the gallery opposite the stage and on which the women's orchestra makes music, George Washington, done in oil—one of the stock properties of Mechanics building—peacefully looks down on the scene from his gilded frame. Several American flags also serve to recall that Boston still is in

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the United States. There is white and firecracker red adorning the spaces on the galleries, and some more of it hiding the pillars in the basement. It is a pleasing combination throughout and one that promotes a cheerful glow.

It goes without saying that there was a "bumper house" on opening night. For if there is anything that the average Bostonese loves better than beans and brown bread, it is that magical piece of cardboard termed a pass. The promoters of the show evidently are aware of the fact and they tickle the popular liking by distributing first night passes with a lavish hand. As a result, the building always is jammed in less than half an hour after its doors are thrown open. Last Saturday night was no exception to the rule. Breathing space was almost at a premium and the character of the crowd suggested that more than the usual number of "complimentaries" had fallen into the hands of young men and young women who measure ribbon and dispense bargains in lingerie, the while tapping pencils on counters and crying "Cash!" The small boys who respond to the cry also were unduly numerous. They helped great to swell the recipts of the candy stands and of the purveyors of root beer and orangeade—which "exhibits" long have been a feature of Boston shows.

The Boston public enjoys its show. The proportion of probable buyers may be small but it does not prevent the young and the old from taking real interest in the cars and the accessories and in gathering in force and looking curiously into the bowels of a car and listening intently to any salesman who may undertake to satisfy anyone's desire to learn what's what. They are great collectors of catalogs and souvenirs, too; and they love to sit long and listen to the music of the band. Even when the automatic piano unlimbers and the attendants who are intent on selling sheet music lift up their voices to prove the quality of their wares, they receive their full need of admiring attention.

Boston enterprise also contributed something of a surprise to all of the exhibitors. Early Monday morning each of them received in a plain envelope addressed in feminine handwriting and marked "Personal." When it was opened, a card, typographically in good taste, was disclosed informing the recipient that Miss —— was prepared to perform expert manicuring at her establishment either morning or evening or at her patrons' home, when it was so desired. It was observable that not all of those who received the cards threw them away.

Manager Campbell also had some of the trade visitors guessing for a while. Their admission buttons are in the form of a small silver fish designed to be worn in the coat lapel. What connection there is between fish and motor cars was a source of much speculation, which found vent in suggestions that a "fishing excursion" was on, that some one would "get the hook" and so forth and so on. It required a native Bostonese to set the unthinking strangers right: Boston is the home of the sacred codfish; hence the button.

But despite the candy and lemonade stands and the automatic piano and other catchpenny devices, which subtract a trifle from its character as an industrial display, the Boston show is a fine, large, impressive show.

CENSUS OF THE SHOW.

Pleasure Vehicles.

Gasolene:		
One cylinder	5	
Two cylinder	28	
Three cylinder	3	
Four cylinder	136	
Six cylinder	30	
Total Gasolene Pleasure		202
Water cooled	183	
Air Cooled	19	
		202
Four cycle	195	
Two cycle	7	
		202
Steam		20
Electric		9
Total Pleasure Vehicles		231
Touring cars	101	
Runabouts	90	
Closed cars	35	
Buggies	5	
		231
Chassis:		
Gasolene:		
Two cylinder	6	
Four cylinder	28	
Six cylinder	10	
Total Pleasure Chassis		44

Cycles.

Motorcycles	40	
Bicycles	6	
Total Cycles		46

Commercial Vehicles.

Trucks	7	
Delivery Wagons	5	
Buses, Stages, etc.	4	
Total Commercial Vehicles		16
Gasolene:		
Two cylinder	10	
Four cylinder	3	
Total Gasolene Commercial		13
Water cooled	8	
Air cooled	5	
		13
Steam	1	
Electric	2	
	3	
Total Commercial Vehicles		16
Chassis	2	
Total Commercial		18

Recapitulation.

Total Gasolene Vehicles	215
Total Steam Vehicles	21
Total Electric Vehicles	11
Total Cycles	46
Total all Vehicles	293

Practically all the well known makers are represented. Such names as White, Winton, Northern, Great Arrow, Royal and Corbin, are prominently displayed in Grand hall, as are those of Stoddard-Dayton, Apperson and Berliet, Stevens-Duryea and Stearns. Mitchell, Pope and Elmore are hardly less prominent. In exhibition hall, and side by side, are the Marmon and Franklin exhibits, with Rambler, Cadillac, Packard, Locomobile, Thomas and Matheson cars, close at hand. There, too, are the National, Reo, and Rainier displays, none the less prominent through being catalogued under agent's names, while Oakland and Brush, go well in the same vicinity, flanked by Studebaker and Premier cars, with the extensive Maxwell line displayed to advantage down by the outer entrance. Among the basement exhibits are to be found the Frayer-Miller trucks, as well as a White car, equipped with a special ambulance body, the Knox, Waltham and Studebaker commercial vehicles.

Rather surprising in a show coming so late, is the staging of several new models by makers well known and thoroughly exploited at former exhibitions of a like character. Prominent among these is the new Locomobile "40 Runabout," which has not been introduced publicly before, and which is a low-hung, modish affair, built on clean cut, distinctive lines which, though in many ways a departure from former Locomobile practice, yet retain sufficient stability to make it a worthy member of that respected and much prized line. Mechanically it is merely a new version of the model "I" 40, which already had been shown. That is to say, it is driven by a 5 by 6-inch, four cylinder motor, has make and break ignition, with low tension magneto, selective change gear and double chain drive, and very large braking surfaces. In distinction from the former type of runabout, it has a lighter spring suspension, owing to the use of a lighter body; the seats, besides being of entirely different contour, are lower, giving the close-to-the-ground appearance already noted; and a larger steering wheel is used, mounted on a column which is given a considerable rake in order to bring it into convenient position. The rear seat, instead of being mounted on a turtle deck, is placed upon an artillery box, and is demountable. On this account, either one or two passengers may be accomodated behind by the use of one or two bucket seats, the box may be left bare, or it may be removed entirely, leaving the flat deck for carrying purposes. Even without removing the box, however, there is ample room back of the driver's seat for stowing such luggage as a trunk, large hamper or several suit cases.

The same spirit is manifested in a new Studebaker creation, also shown for the first time, although mounted on the 30 horsepower chassis which is already well known to 1908 show goers. It is styled the

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Suburban Roadster and is adaptable for the transportation of two, three or four passengers, according to circumstances, or to the accomodation of a surprising amount of luggage or camp paraphernalia in the roomy box body. The general form is that of the conventionalized Beverly Wagon, with fully enclosed box body set off with rectangular outside framework into regular panels. The rear seats, of which there



PICTURESQUE "WISTERIA WALK" IN EXHIBITION HALL

are two, are interchangeable and may be mounted on the box as desired to carry one or two passengers.

One of the features of the Franklin exhibit which cannot fail to catch the eye of the visitor is an occular demonstration of the authenticity of the catalogue specifications given out by the maker of this staunch exponent of the air cooled motor and the wood fame. One of the 1908 cars is mounted on platform scales, each wheel being supported independently of the others, the combined indications of the four scales adding up to a figure nearly 200 pounds less than the nominal weight of the car. A large dial mounted on the vehicle is equipped with two hands, one of which points to the rated weight of the car and the other to the actual weight shown by the scales, proving conclusively that the catalogue states fact with a very respectable margin of truth to spare.

The most recent of the many Franklin offerings is the light rumble runabout, especially suited for the uses of physicians who employ drivers, and occasionally wish to carry a friend or patient in addition. It is built on the model G chassis, has the same 16 horsepower, quadruple motor, equipped with the new concentric valves, and 90-inch wheel base. The rear seat, which is designed to accomodate a single passenger only, is mounted on a plain box, the sides being cut away slightly to afford easy access, while the general effect is that of the continuous body, rather than the detached seat carried on a flat deck. The lines of the vehicle are tastefully arranged, and while the effect is sufficiently light and graceful to be pleasing, it is still decidedly practical and substantial—which is an important point of distinguishment.

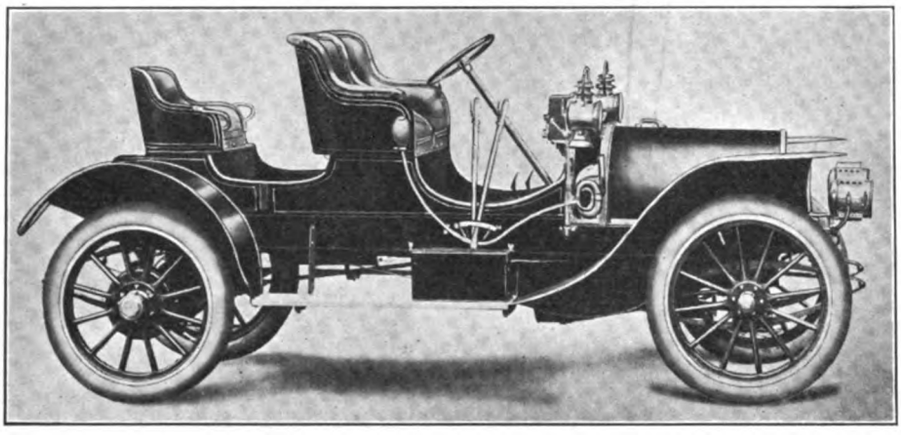
Among other favors it was reserved for Boston to have the honor of uncovering the first of the 1908 Ford cars to be seen at any show. Model S, which is made in no less than three varieties, with but small distinction between them as far as really vital points are concerned, is no less a mechanical and manufacturing achievement. In a general way it much resembles it. There are the same motor and transmission, the same features of control, and, practically the same outline, except, that, as in the case of last year's model R, the fenders are connected by a running board, while the seats are more liberally proportioned and consequently more comfortable to ride in. Model S Roadster is an improvement on the first, to the extent of a rumble seat, a concave dash, flanged mud guards, and one or two other points which make for an improvement in appearance without altering the road performance of the vehicle. A third adaptation of the same chassis design is found in a wonderfully attractive little inside-driven coupe, which at the price, $800, is calculated to form a most useful accessory to the business of the doctor, rural or suburban.

The usual aggregation of closed vehicles,

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which has come to be an expected feature of all present day shows, is in this case augmented by a couple of newcomers in addition to that just mentioned. One of these is the taxicab of the new Oakland line which made such a favorable impression on its first appearance at the time of the Chicago show. Like the touring car which it accompanies, this vehicle is of particularly light and graceful mold, and substantial looking withal. The pleasing exterior of these cars is all the more noteworthy as housing one of the most original power plants ever put into a chassis.

Another gratifying interpretation of the motor cab idea is found in the new Atlas vehicle which is being shown for the first time and which is mounted on a chassis especially designed for the arduous service which is expected of the commercial passenger vehicle. The power plant is the twin cylinder, two-cycle Atlas motor, which is used in the entire line, planetary change gear and shaft transmission to the rear live axle. An unusual and novel feature of the machine, which is sufficient in itself to attract no little attention—particularly in a vehicle intended for practical service of this sort—is the motor starting device. This is a ratchet contrivance operating directly on the fly wheel of the motor and worked from the driver's seat by means of a handle which is placed in the foot board at the right end and just in front of the seat riser. Simply pulling up the handle sharply gives the crank shaft the slight twirl required to set the engine in motion.



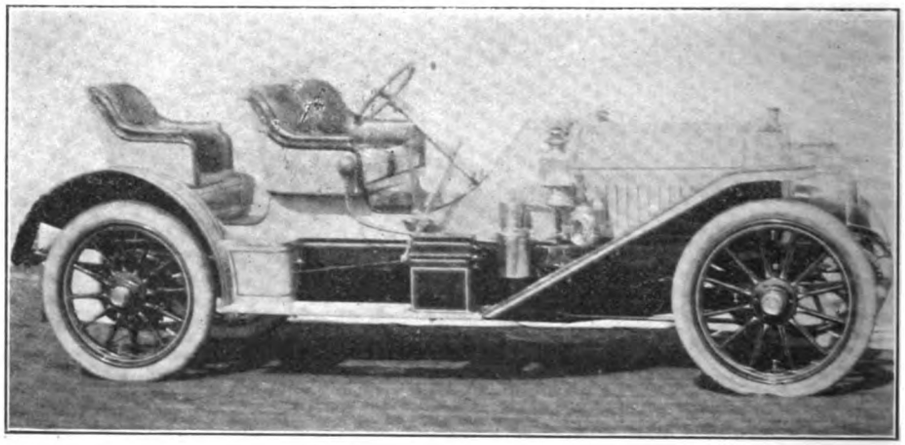
FRANKLIN 16 HORSEPOWER RUMBLE RUNABOUT

One or two cars which are new to Boston, and which have been only in one or two other of the smaller local shows, are worthy of passing note. One of these, the Blomstrom "gyroscopic" car is remarkable in that its two cylinder opposed motor is set in the fore part of the car with its crank shaft vertical. The fly wheel, which is below the cylinders, is of very large diameter and is formed with a perfectly flat surface underneath which serves as the driving member of the double disc change gear. The driven member of this group is mounted slideably on a forward extension of the propeller shaft and is actuated for application of the driving effort by means of a foot pedal, while the speed ratio is controlled by a side lever. By depressing a button in the top of this lever the gear changing arm is released from engagement and a second rocker arm picked up which actuates a cam clutch on a special flange on the upper side of the fly wheel. The effect of moving the lever back and forth after depressing the button is that of "cranking" the motor, and in this way, starting from the seat is made ane easy effort.

The "Crown Special" is another which has only recently come into being. It is a four passenger runabout of light, racy and modern construction. It is engined with a 45-50 horsepower four cylinder motor, has a selective change gear and shaft drive. By dint of throwing the front axle well up to the radiator line and setting the rear axle back, the 114-inch wheel base is made to support the neat, low body in easy and effective fashion.

The Speedwell, which is still another of the same class, is shown in runabout and touring car types, as well as in plain chassis. It is a 40 horsepower, shapely vehicle, built on approved lines and having about it no element of untried or unproven quality. The cylinders are individually cast and measure 4¼ by 5 inches. Double ignition is provided by the use of both high tension magneto and battery and coil systems, the pump is gear driven, the radiator is cellular. Transmission is secured by means of a selectively operated, vertical gear set and propeller shaft, the entire system being mounted on Timken roller bearings. The body is hung on semi-elliptic springs in front and full elliptics in the rear, the latter being coupled to an angle bracket well above the frame in order to give plenty of spring set without raising the body too far off the ground. The wheel base is 116 inches, the wheels 34 inches in diameter shod with 4-inch tires all around, and the body is designed for three and five passengers respectively, in the runabout and touring car models.

The Brouhot car, which was one of the promised innovations of the show, failed to materialize during the early part of the week, as did the Viking—a local production which was to have made its maiden appearance. Another car which was not on hand on the opening night, but which was promised certainly for today (Thursday) is the new P & S, which is just being brought out by the Palmer & Singer Co., New York City. It is a machine mounting the "C. G. V." type of bonnet with radiator suspended below the frame and made in three general types corresponding to the uses of the touring, runabout and town and country cars. In the latter, which is equipped with landaulet body, the frame is developed into a double drop just in front of the rear wheel to allow for a low entrance and easy step without reducing the road clearance correspondingly. The power of this model is given as 28-30 and other general specifications include 112-inch wheel base, 34 by 4-inch tires, semi and full elliptic springs, front and rear, transmission by multiple disc clutch, selective gear set mounted on ball bearings, and cardan shaft. A somewhat similar mechanical equipment is applied to the "Skimabout" which is equipped as a light, two passenger vehicle for hasty road work.



LOCOMOBILE 40 RUNABOUT

Practically all cars of wide repute have

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been shown previously at the New York and Chicago shows. But, as is always the case, several New England makers reserve their efforts for this show, where, with pardonable loyalty they display their new models for the first time. In this instance there are ten makers and as many vehicles which are to be included in this category. One of these is the Shawmut, which the Shawmut Motor Co., Stockham, Mass., introduces to its second year of existence with a new motor of improved pattern and several other improvements, while yet retaining many of the features which distinguished it a year ago. The motor in question is of quadruple pattern and has twin cast cylinders of 4.8 by 5.5-inch, bore and stroke. It is distinguished among other points by an original carburetter set in close up to the cylinders with a large mixing chamber leading directly to the siamesed intake ports, practically without anything corresponding to the ordinary manifold. A further point of interest is the use of independent exhaust pipes from the cylinder groups to the muffler, thus giving a perfectly free outlet for the gases at all times. Another new feature is the original dredger oiler which, unlike many devices of the sort, has a variable rate of feed, made possible by altering the number of teeth picked up by the feeding pawl at each revolution of the driving shaft. The vehicle itself is expensively built along the lines generally characterized as "continental" and is originally designed in every particular saving that of ignition and body equipments.

A new model known as the "Forty Roadster" has been added to the Springfield line, which is the product of the H. C. Medcraft Automobile Co., Springfield, Mass., in addition to which several changes have been made in the construction of the chassis, which is practically the same with all types. The new machine is a two, three or four passenger vehicle of the popular order, mounting a nobby and rather unusual sort of body which carries out the idea of the old time box buggy to the extent of employing raised sides for both front and rear foot boards, thus excluding all draught from the lower extremities of the occupants, and incidentally, affording a touch of novelty to the general appearance of the vehicle which is most gratifying. A further novel effect is secured by the exceptionally low seat line and the high backs, which are carried out uniformally for both front and rear seats. The rear member, as is the case with several other of the new runabout models, may be used either as a one or two passenger accomodation by adapting the double removable bucket seats to suit the instant's requirement. The wheel base is 114 instead of 108 inches, as in the touring cars. Of the changes in construction which have been introduced this year, the adoption of double ignition by means of Comet magneto, unit coil and high tension distributor, in conjunction with the battery equipment, is noteworthy, as is the use of ball bearings throughout the axle equipment, in place of roller bearings. A new type of transmission also is employed, involving the use of a selective gearset having chrome nickel steel gears, and the use of a buffer torsion rod, in place of the radial side rods formerly employed.

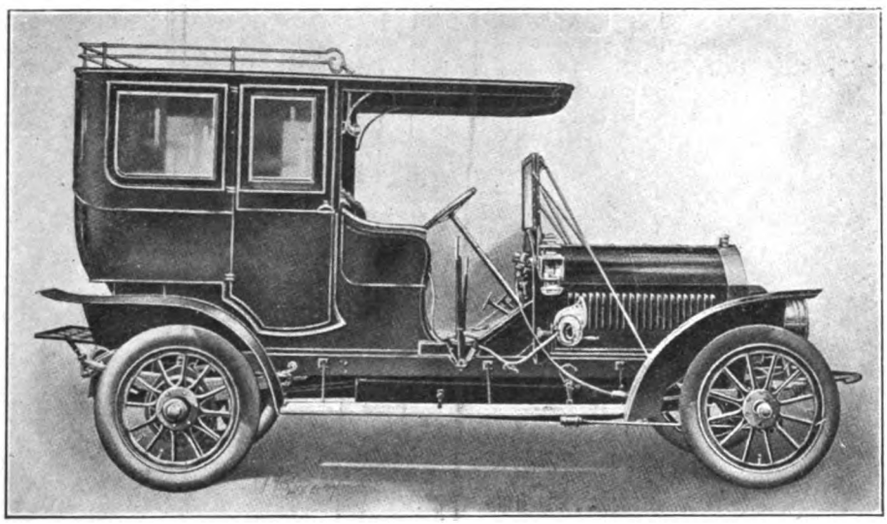
Although the Stilson Motor Car Co., Pittsfield, Mass., has been making six-cylinder cars, and six-cylinder cars only, for some little time, this is the first occasion on which one of them has been on view at any show. The vehicle is characterized by



GENERAL VIEW IN GRAND HALL

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a number of original points, chief among which are those centering about the motor. The power plant is supported on a sub-frame running well back of the center of the car, and the engine base is carried on this by means of solid webs running the entire length of the crank case on either side. An unusual feature in addition to this, is the method of lubrication, which consists of a flush-feed system actuated by gravity from a tank concealed in the concave dash, and supplied by pump return from the engine base. The leads from the supply tank are carried over to the left side of the crank case and delivered to a distributing manifold concealed in the base, and tapped off at intervals for the various bearings. The crank shaft is supported on seven bearings, which is made possible by the use of independently cast cylinders. Like the oil tank, the coils are concealed in the dash. They are employed in connection with the full system of double ignition, using two sets of plugs, and the Bosch magneto. The car itself, outside the engine, is designed in the conventional way. It has 123-inch wheel base, 34 or 36-inch wheels at the option of the purchaser, 4 and 4½-inch tires, front and rear, and weighs 3,400 pounds. The motor, which is 4 11-16 by 5½ inches, bore and stroke, is rated at 50-60 horsepower.



STILSON SIX-CYLINDER CAR

The reorganized Grout Automobile Co., Orange, Mass., brings to the show, in addition to its touring car, a brand new "tourabout," which is to say, a four-passenger car of approved pattern, mounting a number of the Grout features, such as double ball bearings, original in design and closely resembling the so-called bicycle type for each of the wheels, and the use of a wood frame armored, and supporting the motor and transmission by means of a metal sub-frame. The change gear system is selective in operation, but has a direct acting lever, the selection being made by means of a finger action which picks up one or the other of two rocker arms, actuating the sliding members. The motor is rated at 35 horsepower, and the wheel base is 115 inches. The new body carries two double bucket seats of practically identical pattern, is substantial in appearance, and serviceable looking as well.

Bay State Forty, is a name which first came to light a year ago when the Bay State Automobile Co., Boston, offered its initial product at the show. The product remains at this time, practically unchanged, so far as both minor and major details are concerned. Among the features of the machine which are particularly well worth remembering, are the use of "triple" ignition, by means of a high tension distributor and unit coil—used either with magneto or battery—as well as the usual battery and coil system, with two sets of plugs; the use of a "cushion box," or shock absorber in the transmission line, between the clutch and change gear; the method by which the sub-frame carrying the power plant is supported on three points, with the third in the rear; and the use of double trussed torsion rods on the rear axle. The motor supplies 40 horsepower on requirement, the change gear affords three forward changes of speed, the wheel base is 122 inches, and the weight inclusive of equipment is 2,900 pounds.

Coincident with the opening of the present show, Boston became the birthplace of two new motor buggies, both of local origin, and both designed on somewhat original lines. Because of their extreme youth, it is not surprising that neither of these newcomers should have been on hand for the opening of the exhibition. In the Boston Highwheel automobile, the Boston Highwheel Auto Mfg. Co., Boston, is producing not simply a new member of a rapidly growing class, but also a vehicle embodying a number of radical features. The motor, which is of the double-opposed, air-cooled type, is mounted within the body and directly over the rear axle. Transmission is accomplished by means of a single belt operating over a pair of expanding pulleys adapted to give a wide range of speed variation by the simple movement of one lever, and without the necessity of declutching when changing speed. For purposes of reversal, a double bevel gear connection is established between motor and transmission, only one being in use at a time, one affording the forward and the other the backward drive. A trapezoidal belt is employed, 1½ inches wide, by ¾ inch deep. Another novel feature, is the adoption of a differential brake, acting upon the balance gear in the counter shaft, which drives the rear wheels through side chains. By depressing a foot button at any time, the action of the differential is checked, whereby skidding, or excessive differentiation due to unequal adhesion in mud or snow, may be checked. The wheels are 44 and 48 inches in diameter, front and rear, respectively, and are mounted on roller bearings of original design. The wheels are heavily dished, and are shod with 1⅜-inch solid tires. The weight complete is about 900 pounds.

Although designed and marketed in Boston, the Crown Motor Carriage, which is just being introduced to Boston by the Crown Motor Vehicle Co., is made largely in Amesbury, Mass., whence come so many New England carriages. It has a double opposed, 12 horsepower motor, air cooled, and hung on three points. Transmission is by means of an original adaptation of the multiple disc clutch idea, two clutches being employed, and affording two speeds forward and two in the reverse direction. The wheels are 40 inches in diameter, shod with 1⅛-inch solid tires. The wheel base is 74 inches. A special feature is made of the body, which is of unusually roomy design and has a seat 21 inches deep, and 43 inches long.

The Bailey electric phaeton, manufactured by S. R. Bailey & Co., Amesbury, Mass., will be remembered as the vehicle distinguished by its originality of construction—an originality which commences with the wheels, and continues through every fiber of the structure. As shown for the first time last year, it embodied in the frame, body, and running gear, a number of unique features. Most of these have been continued over into the 1908 model, while one or two new ones have been added to them. Among these may be mentioned the steering device. This is in principle and action, the same as the ordinary tiller arrangement. Upon the upper extremity of what is apparently an ordinary steering column, is mounted a wheel, complete except for the side next the driver, which is bounded by a short chord, leaving the outline roughly D-shaped. The entire column takes the part of the tiller and is swung from side to side in driving the car, its motion being guided by an inverted segment mounted on the dash. An ingenious switching device, prevents the running plug from being inserted until the controller—which is mounted above the steering "wheel"—is set in neutral position, while correspond-

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ing arrangements provide for the interrupting of the motor circuit whenever the foot brake is applied.

Of all steam cars, none perhaps, has a stronger hold over Boston than the Newton product, the Stanley, which this year appears in somewhat modified form as to power plant, and with several variations in body mounting as well. Of the former, may be mentioned the use of a new water indicator, and a new pump transmission which is a simplification and improvement over the former arrangement, as well as the new double by-pass on the water line, which is connected and controlled through the steering column. Of the new models, Model K, is a gentlemen's roadster, having practically the same power plant as was the moving feature of the one-time famous "Florida Bug," while Model M, is a seven passenger touring car—the first of its kind to be made by the Stanley Motor Carriage Co.

Another newcomer in the quartet of steam representatives present, is the Clark, made by Edward S. Clark, and a thoroughly Boston product. The latest model, which is on view at the show, is equipped with a new engine, which, unlike that employed last year is of the single, four-cylinder opposed pattern, having single acting pistons and poppet valves. The transmission gearing also has been improved to the extent of embodying high, low and neutral gears. Reversing and cutting off are accomplished by manipulating the cam shafts. The vehicle on exhibition is a special model, built on the standard chassis, but differing from the regular model in several points, such as the use of the aluminum dash, special body and trimmings. The motor is rated at 20 horsepower, the wheel base is 110 inches, the tires are 36 by 4 inches, and the total weight is 2,800 pounds.

Boston is no exception to the accessory rule of all shows, but rather the superlative degree of comparison. The present show possesses by way of attraction nearly everything which has charmed or disgusted the accessory chaser at other shows and several things more, some of which are well able to stand alone.

The rotary motor, for instance, is obliged to stand alone, because it has no rival. As exhibited by the American Rotary Moto Co., Boston, it proves to be a rotary motor and not a motor which rotates, in that it contains but one essential moving part which is a piston of approximately oval section revolving in a casing which is opened at either end to receive a pair of abutments which bear against the piston to form a closed explosion chamber between it and the walls of the casing, or open, to release the spent gas to the exhaust pipe. Since there are two such abutments and consequently two explosion chambers, the mixture, which is admitted under pressure, is fired simultaneously and produces two co-incident impulses every revolution. These motors are not quite ready for the market, but shares in the company's stock are announced in a circular as being for sale at a popular price.

Then there is the change gear system which, though of the ordinary sliding pinion type, is so devised as to prevent all possibility of stripping the gears when meshing them. To this end, the driven gears are mounted loosely on a screw thread instead of being keyed to their shaft as is ordinarily the case. When the primary engagement takes place and the ends of the



CENTRAL VIEW IN GRAND HALL

teeth are meshed, the driver commences to turn the driven gear, as is the case in the common arrangement. As the only resistance encountered is that of the screw thread mentioned, and a light spring which tends to hold the gear away from its position of normal engagement, however, there is no chance of stripping the teeth. By the time the teeth have engaged to their full width of face, the driven member has advanced far enough along its screw thread to pick up a double dog clutch on the shaft, which it then begins to drive. Conversely, when the gears are drawn out of engagement the spring referred to develops sufficient tension to run the driven gear back along its thread and free it of the driving dogs. The device is being shown by its inventor, H. O. Fletcher, Hyde Park, Mass.

Having got this far in the "improvement" of the automobile, it is natural to look next to the tires. There the investigator at once falls into a perplexing dilemma. If he prefers the "legitimate" in the sense of the conservative and popular patterns already in current use, he may visit the booths where such well known brands as the Hartford, Goodyear, G & J, Diamond or Firestone tires are on view. But if he prefers the more novel devices, he must investigate the original principles of the Dow and the new Shaw Self-Sealing tires, both of which are alike in comprising an inner tube having an envelope wall on the tread side into which some special compound is inserted for the everlasting damnation of all the little puncture fiends.

In the Shaw tire, which the Automobile Utilities Co., Boston, is showing for the first time, the filling in question comprises a layer of melted rubber and asbestos fiber which it is claimed will amalgamate perfectly with the tread rubber when blown into a wound in the tire, forming a perfect cure for the ill. There is also the Zeglen Bullet Proof tire, which besides being immune from damage by the wayside sheriff is claimed to be unusually resistent in the matter of ordinary punctures, if not absolutely hole-proof in every way. The Zeglan Bullet Proof Cloth Co., Chicago, Ill., also make a specialty of bullet proof vests and material. The Ball Bearing Tire Co., Providence, R. I., presents a modern version of a somewhat old idea in the ball bearing tire, in which the shoe encloses a rubber filler containing a series of spherical, molded pockets which contain as many balls of pure gum rubber, vulcanized and moderately inflated, while on the rim side is an open chamber capable of inflation to the required degree. If one ball is punctured, the tire is not deflated—and there you are, simple as can be! The Commonwealth Rubber Co., Reading, Mass., exhibit the Mitchell Puncture-Proof tire, which is practically a tire within a tire—but not in the ordinary sense. The outer tire is of the solid variety, while the inner and pneumatic one is of smaller great diameter and serves as a support for the rim which carries the tread shoe.

While omitting the previously exhibited wares of such makers as produce the "Connecticut," "Heinze," "Witherbee," and "Pittsfield," and skipping the several well known makers of batteries, and commutators and attachments and fixings and supplies, there is yet considerable to see that is new in the ignition line. As, for instance, the Two-Spot spark plug shown by the Two-Spot Mfg. Co., Canasota, N. Y., which comprises a central insulated electrode and an extended and hooked ground wire, between which is interposed a little spool of porcelain surrounded by a single coil of fine wire. The spark jumps first, from the insulated pole to one side of the spool, and then from the spool to the ground wire, making two jumps across two gaps. As the spool is mounted in such a way as to turn constantly under the influence of the action going on in the cylinder, there is supposed to be no chance for sooting to occur. Another novelty in the plug line is to be seen in the Sterling, in which the Windsor Mfg. Co., Worcester, Mass., presents a device, ordinary, except that the insulated central wire is bent twice, first at

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right angles and toward the shell, and then circularly and parallel to the beveled edge of that member. The spark has opportunity to jump in several points at once—if it wants to. And apparently it does. The Sterling Mfg. Co., also are showing a new automobile vise, it should be observed parenthetically, which is excellent in several ways, but principally because it is small and can be clamped to the running board without necessitating the use of any permanent fixture likely to interfere with the normal use of the step. The device is swiveled on its base and swiveled in its main clamp so that it has a universal motion, contains pipe jaws under the main faces of the jaws, and wire holding jaws as well. Furthermore it is hardened and oxidized, so that it is durable beyond the average measure of such contrivances. Speaking of ignition systems, however, the Orswell method of firing the charge in the motor cylinder, consists in the use of a single master vibrator enclosed in a neat case of vest pocket size, and the igniter, which is a combined coil and plug, having no external secondary connection, and which screws directly into the cylinder it is intended to fire. The system of the Sterling Alternating Ignition Co., Binghamton, N. Y., is such that every time the primary circuit is closed through the single master vibrator, the current flows oppositely to its direction during the previous and succeeding ignition periods. This corrects the pitting action of the current on the contact points of the vibrator.

If you want to know how the Standard Speedometer works, you can readily tell by observing the Brobdinagian working model on view at the stand of the Parker Mfg. Co., Roxbury, Mass., where an exaggerated reproduction of the device informs you it is the principle of the fly-ball governor all over again. Or, in the case of the Casgrain Speedometer, you are permitted to dissect one of the devices all by yourself and examine the parts, in order to learn that it is fluid friction, brought about by the agitation of the oil-contents of the device, which is set in motion by a little paddle wheel, which drives a second and enclosing paddle wheel sufficiently to rotate the indicating drum and reveal the number indicating the speed of the vehicle. You discover, by the way, in case you did not know it already, that speedometers have formed an interesting subject for study to a good many men in times past. Their conclusions are exhibited in concrete form at the booths of the Jones Speedometer Co., Hoffecker Co., R. H. Smith Mfg. Co., Warner Instrument Co., Wm. H. Jones, and others, not to mention that of Chas. E. Miller, where you find a little of most everything else as well.

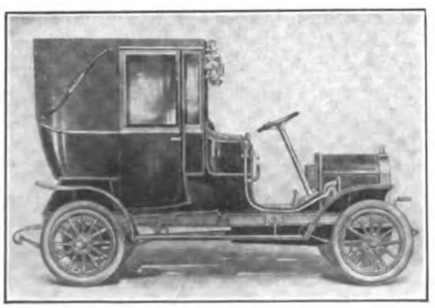
The same is true in kind, of the displays of shock absorbers. The Hartford Suspension, the Foster, Kilgore, Hotchkin, Gabriel and others, may be familiar in action. But the Flentje shock absorber is a new device, of the fluid type, working like a pump with a multi-ported valve on its upper face, to check the rebound. The Du-Ro, which is the invention of Duncan Robinson, Boston, involves a novel application of the principle of the ordinary leaf spring, obtaining its action through the combined effects of elasticity in the blades, and friction between the leaves. A multiplicity of very thin, flat spring leaves, are packed away together in a circular case which is so shaped that the movement of the working part causes the leaves to be bent up with increasing movement and resistance progressively. Another new thing in the shock abosrbing line, is the offering of the Ciglia Shock Preventer Co., New York City, which looks very much like something which it is not. The necessary resistance to motion in the arm, is obtained by means of a couple of interlocking discs, having irregular faces, held together by means of a five-pronged star-shaped, spring washer. When the arm moves, the tendency is to separate the discs against the pressure of the washer.

Safety devices, in general, multiply without end. But the Barber Safety, which is the indefinite name applied by the Motor Safety Mfg. Co., Brooklyn, N. Y., to its novel device, is worthy of more than passing note. It is a scheme devised to preserve the bones of him who would fain start the "kicking" motor without retarding the spark. By means of a ratchet detent mechanism which is inactive so long as the resistance of the motor crank shaft is normal, the ordinary starting ratchet is disengaged just so soon as the resistance in the motor exceeds a predetermined amount—which it is sure to do in the event of a backfire. The bone saver is enclosed in a small metallic casing of inconsequential aspect, and is attachable to any starting crank without requiring material alterations in the arrangement.

Excepting the candy, lemonade, music and newspapers, the exhibits are as follows:

Automobiles.

The White Co.—White.
J. W. Maguire Co.—Great Arrow.
Thos. B. Jeffery & Co.—Rambler.
Stanley Motor Carriage Co.—Stanley.
Curtis-Hawkins Co.—Chadwick, Speedwell.
Geo. J. Dunham—Royal Tourist, Corbin.
Winton Motor Carriage Co.—Winton.
Reed-Underhill Co.—Knox.



ATLAS TAXICAB

Park Square Auto Station—Berliet, Stoddard-Dayton.
Peerless Motor Car Co.—Peerless.
Fred S. Smith—Autocar, Apperson.
Geo. H. Lowe—Imperial, Aerocar.
J. W. Bowman Co.—Stevens-Duryea.
Mills-Kennedy Co.—Welch.
S. R. Bailey & Co.—Bailey Electric.
Morgan B. Kent—Hotchkiss, Stearns, Blomstrom.
Grout Automobile Co.—Grout.
W. M. Jenkins & Co.—Mitchell.
Shawmut Motor Co.—Shawmut.
Dodge Motor Vehicle Co.—Pope-Toledo, Pope-Hartford, Pope-Tribune, Pope-Waverly.
Jacobs & Bartlett—Mercedes, Allen-Kingston.
F. R. Parker & Co.—Elmore.
W. A. Frederick Co.—American, Overland, Marion.
Franklin Automobile Co.—Franklin.
F. E. Wing—Marmon.
Crawford Automobile Co.—Crawford.
Harry Fosdick Co.—Atlas, Springfield, Baker Electric.
Locomobile Co. of America—Locomobile.
Columbia Motor Vehicle Co.—Columbia.
Maxwell-Briscoe-Boston Co.—Maxwell.
Ford Motor Co.—Ford.
Morrison-Price Co.—Rainier, Wayne, Mora.
A. T. Fuller—Packard, Cadillac.
Boston Motor Co.—Acme.
Matheson Co. of Boston—Matheson.
H. C. & C. D. Castle—Lozier.
Premier Boston Depot—Premier.
Linscott Motor Co.—National, Reo.
Edward S. Clark—Clark.
Whitten-Gilmore Co.—Thomas.
F. E. Randall Co.—Pullman, Stilson, Pennsylvania.
Algonquin Motor Car Co.—Oldsmobile.
Lane Sales Co.—Lane.
Austin Agency—Austin.
Oakland Motor Car Co.—Oakland.
South End Motor Car Co.—Brush.
Northern Motor Car Co.—Northern.
Simplex Motor Co.—P. & S. Simplex.
D. P. Nichols & Co.—Frayer-Miller.
K. A. Skinner—De Dion, Brouhot.
Ferd. F. French—Schacht.
Waltham Mfg. Co.—Waltham-Orient.
Butler Motor Car Co.—Rapid, Cleveland, Pierce-Racine.
Boston Hightwheel Auto Mfg. Co.—Boston Highwheel Auto.
Chas. A. Eaton—Lambert.
H. C. Stratton—Kissel Kar, Car de Luxe.
The Fiat Co.—Fiat.
Renault Freres Selling Branch—Renault.
Studebaker Bros. Co.—Studebaker.
Bostonia Motor Co.—Cartercar.
Crown Motor Car Co.—Glide, Crown.
P. W. Wood, Jr.—Holsman.
Corey Hill Garage Co.—Kiblinger.
Bay State Auto Co.—Bay State Forty.
Pierce Bros.—Delivery Wagon.

Motorcycles.

Hendee Mfg. Co.—Indian.
Light Mfg. & Foundry Co.—Light.
Ovington Motor Co.—F. N.
American Motor Co.—Marsh.
Reliance Motor Cycle Co.—Reliance.
Merkel Motor Co.—Merkel.
Reading Standard Company—R-S.
Aurora Automatic Machine Co.—Thor.
S. M. Supplies Co.—Excelsior.
P. W. Wood, Jr.—Curtiss.
Crouch Motor Co.—Crouch.

Accessories.

Motor Safety Mfg. Co., Brooklyn, N. Y.—Safety cranking device.
H. Snowden, Philadelphia, Pa.—Flashlight spark plug.
E. B. Badger & Sons Co., Boston—Hoods, tanks, fenders, piping, etc.

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Hull & McArthur, Boston—Ericka hand soap.
W. J. Forbes, Boston—K-W magnetos.
Two-Spot Mfg. Co., Canastota, N. Y.—Two-Spot spark plug.
John A. Salmon, Boston—Monograms.
G. A. Haws, New York City—Panhard oil.
Wm. Cramp & Sons' Ship and Engine Building Co., Philadelphia, Pa.—Bronze castings and parts.
Eco Mfg. Co., Boston—Acetylene storage tanks and torches.
Draper Bros., Canton, Mass.—Robes.
Atwater Kent Mfg. Works, Philadelphia, Pa.—Ignition apparatus.
Baldwin & Co., Bangor, Me.—Tire repair outfits.
Windsor Mfg. Co., Worcester, Mass.—Sterling spark plug, Sterling auto vise.
Stuart Howland Co., Boston—Lamps, electrical devices, Wizard tubular ignitor.
Orswell Ignitor Co., Boston—Ignition systems.
Atlantic Refining Co., Cleveland, O.—Lubricants.
Stepney Spare Motor Wheel Co. of America—Stepney spare wheels.
Anderson Spark Plug Co., Boston—Anderson spark plugs.
Valvoline Oil Co., New York—Lubricants.
Echo Horn Co., Cleveland, O.—Exhaust horns.
H. O. Fletcher, Hyde Park, Mass.—Automatic meshing change gear system.
Burns Boston Battery Co., Boston.
H. F. Campbell, Boston—Duplex coils, Auto-Marine spark plugs, Red Cross spark plugs, Vim motors.
Voorhees Rubber Co., Jersey City, N. J.—Rubber sheetings and fabric.
J. O. Caldwell, Jr., Boston—"Oilright" cans
Old Corner Book Store, Boston—Maps and automobile literature.
Duncan Robinson, Boston—"Du-Ro" shock absorber.
Ball Bearing Tire Co., Providence, R. I.—Ball bearing tire.
Albert Champion, Boston—Ignition specialties.
Non-Explosive Safety Can Co., Boston—Safety cans and containers.
Zeglen Bullet-Proof Cloth Co.—Bullet-proof fabric and non-puncturable tires.
Consolidated Optical Mfg. Co., New York City—Goggles and glasses.
Ciglia Shock Preventor Co., New York City—Ciglia shock preventor.
Nonpareil Brass Co., Providence, R. I.—Wind shields, robe rails, and fittings.
Defiance Chain Co., Boston—Chain tire grips.
T. A. Bemus Co., Inc., Boston—Timers and distributors.
Shove & Gage Co., Inc., Providence, R. I.—Metal polishes.
Hillman Auto Supply Mfg. Co., Boston—Lamps, fittings and supplies.
Underhay Oil Co., Boston—Lubricants.
A. J. Wilkinson & Co., Boston—Tools, hardware and supplies.
The Pantasote Co., New York City—Pantasote top and cover fabrics.
T. C. & W. L. Frye, Rochester, Pa.—Jacks and motor equipment.
Westchester Appliance Co., Yonkers, N. Y.—Westchester ignition supplies.
Ajax-Grieb Rubber Co., New York City—Ajax tires.
National Carbon Co., Cleveland, O.—National dry batteries.
Leather Tire Goods Co., Newton Upper Falls, Mass.—Woodworth tires and treads.
New England Motor Co., Lowell, Mass.—Rex ignitors.
Park Square Auto Station, Boston—National batteries and sundries.
B. F. Goodrich Co., Akron, O.—Goodrich tires.
Connecticut Tel. & Elec. Co., Meriden, Conn.—Connecticut ignition apparatus.
A. W. Harris Oil Co., Providence, R. I.—Harris oils.
Hartford Rubber Works Co., Hartford, Conn.—Hartford Tires.
New York & New Jersey Lubricants Co., New York City—Non-Fluid oils.
Pennsylvania Rubber Co., Jeannette, Pa.—Pennsylvania tires.
Heinze Electric Co., Lowell, Mass.—Heinze ignition apparatus.
Gilbert & Barker Mfg. Co., Brooklyn, N. Y.—Storage tanks and measuring pumps.
Visor Knitting Co., Niagara Falls, N. Y.—Mufflers.
Hopewell Bros., Cambridge, Mass.—Tire cases, covers, etc.
J. T. Stanley, New York City—Mobo cleaners.
J. Frank Cutter, Cambridge, Mass.—Bodies and tops.
Sage's Trunk Depot, Boston—Automobile trunks and luggage carriers.
L. C. Chase & Co., Boston—Top and cover leathers.
Wm. C. Robinson & Son Co., Boston—Autoline lubricants.
Vacuum Oil Co., Rochester, N. Y.—Vacuum and mobiloils.
Boston Gear Works, Norfolk Downs, Mass.—Steering devices and parts.
Motor Car Specialty Co., Boston—Speedometers and equipment.
T. F. Russell & Co., Boston—Accessories.
American Electric Novelty & Mfg. Co., New York City—Ever Ready specialties.
Firestone Tire & Rubber Co., Akron, O.—Firestone tires.
Atwood Mfg. Co., Amesbury, Mass.—Lamps and generators.
Gilbert Mfg. Co., New Haven, Conn.—Tire cases, covers, and automobile fabric supplies.
F. E. Bowers & Co., New Haven, Conn.—Bowers carburetters.
Witherbee Igniter Co., New York City—Witherbee ignition apparatus.
The Angier Co., Boston—Universal tire protectors and supplies.
Empire Auto Tire Co., Trenton, N. J.—Empire tires.
Truffault-Hartford Shock Absorber Co., New York City—Truffault-Hartford suspensions.
Auto-Igniter Co., New York City—Auto-igniters.
National Auto Accessory Co., Boston—National carburetters.
F. R. Parker & Co., Boston—Pan-O-Lite lubricants.
Wm. J. Smith Co., New Haven, Conn.—Adjustable reamers.
Stackpole Battery Co., St. Marys, Pa.—Stackpole batteries.
Whitney Mfg. Co., Hartford, Conn.—Roller chains.
G & J Tire Co., Boston—G & J tires.
Eagle Oil and Supply Co., Boston—No Karbon cylinder oil.
Dover Stamping & Mfg. Co., Cambridge, Mass.—Drip pans, funnels, measures, etc.
Commonwealth Rubber Co., Reading, Mass.—Mitchell Puncture-Proof tires.
Michelin Tire Co., Boston—Michelin tires.
Hoffecker Co., Boston—Hoffecker speed indicators.
Electric Storage Battery Co., Philadelphia, Pa.—Exide batteries.
Prest-O-Lite Co., Boston—Prest-O-Lite tanks.
Post & Lester, Hartford, Conn.—Accessories and supplies.
Edgar T. Ward & Sons, Boston—Seamless tubing, and metal supplies.
John A. Mason, Boston—Tops, trunks and luggage carriers.
Hess Bright Mfg. Co., Philadelphia, Pa.—Annular ball bearings.
Pettingell-Andrews Co., Boston—J-B ignition supplies.
W. J. Connell, Boston—Casgrain speed indicators, ignition specialties, and supplies.
Boston Auto Gage Co., Boston—Triumph tank gages.
White & Bagley Co., Worcester, Mass.—Oilzum and Cleanzum.
R. H. Smith Mfg. Co., Springfield, Mass.—Springfield motometers.
Acetyvone Co., New York City—Generators and lamps.
Never-Miss Spark Plug Co., Lansing, Mich.—Never-Miss spark plugs.
Warner Instrument Co., Beloit, Wis.—Warner Autometers.
Wm. H. Jones, Boston—National speed indicators.
Dow Tire Co., New York City—Dow tires.
Randall-Faichnay Co., Boston—B-Line oil guns.
Chas. E. Miller, Boston—Accessories and supplies.
National Valgrinok Co., Boston—Valgrinok grinding compound.
F. S. Southergreen, Manchester, Mass.—Swinging tire holders.
Globe Optical Co., Boston—Optical supplies.
C. J. Downing, New York City—Horns, tire holders, and fittings.
Century Optical Co., New York City—Optical supplies.
Brown Folding Stool Co., Boston—Folding stools.
Solderine Co., Boston—Solderine compound.
Boston Auto Light Co., Boston—Boston gas tanks.
F. H. Howard Co., Watertown, Mass.—Coils and commutators.
Kilgore Mfg. Co., Oldtown, Me.—Kilgore shock eliminators.
Wm. H. Richardson Co., Boston—Clothing.
W. W. Winship, Boston—Trunks.
S. F. Bowser & Co., Inc., Fort Wayne, Ind.—Gasoline storage outfits.
Pittsfield Spark Coil Co., Dalton, Mass.—Pittsfield ignition apparatus.
Goodyear Tire & Rubber Co., Akron, O.—Goodyear tires.
Jones Speedometer Co., New York City—Jones speedometers.
Diamond Rubber Co., Akron, O.—Diamond tires.
Gray & Davis, Amesbury, Mass.—Lamps.
Veeder Mfg. Co., Hartford, Conn.—Odometers and tachometers.
Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires.
Eastern Carbon Works, Jersey City, N. J.—Eastern dry batteries.
Morgan & Wright, Detroit, Mich.—Morgan & Wright tires.
Columbia Lubricants Co., New York City—Monogram oils.
F. Shirley Boyd, Boston—Supplementary spiral springs.
G. H. Proctor Supply Co., Boston—Republic tires.
Parker Mfg. Co., Roxbury, Mass.—Standard speedometers.
W. S. Daniels, Boston—Lamps, rails and ignition equipment.
Massachusetts Auto Co., Boston—Elastic tire filling.
Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel horns and shock absorbers.
J. W. Coglan Co., Boston—Monograms.
William Nolan, Boston—Tops, wind shields, and body work.
A. Terminello, Boston—Flash Kleaner.
P. A. Murray & Co., Newton, Mass.—Tops.
S. M. Supplies Co., Boston—Accessories and supplies.

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Fairbanks Co., Boston—Marine engines.
Fuller & Sullivan, Boston—Leather garments.
American Rotary Motor Co., Boston—Rotary gasolene motors.
Melrose Auto Co., Melrose, Mass.—Steam automobile engine.
Judson L. Thompson, Waltham, Mass.—Kerosene burners.
West & Dodge, Boston—Pattern makers and designers.
Geo. F. Kellom & Co., Philadelphia, Pa.—Invader oils.
Automobile Utilities Co., Boston—Shaw self-sealing tire.
Teel Mfg. Co., Medford, Mass.—Top materials, tire cases, covers, etc.
Swinehart Clincher Tire & Rubber Co., Akron, O.—Swinehart tires.
Columbia Vehicle Tire & Top Co., Boston—Tops, tire cases, and covers.
Moore-Smith Co., Boston—Fur coats.
Norton Grinding Co., Worcester, Mass.—Emery wheels and grinders.
St. John Rubber Co., Boston—St. John cushioned, non-puncturable tire.
Chandler & Farquhar Co., Boston—Machinery and tools.
Coates Clipper Mfg. Co., Worcester, Mass.—Coates flexible shafting.
Coes Wrench Co., Worcester, Mass.—Coes wrenches.
Walden Mfg. Co., Worcester, Mass.—Walden ratchet wrenches.
Earnst Flentje, Cambridge, Mass.—Flentje gasolene separator and shock absorber.
National Auto Top Co., New York City—Tops, covers, and casings.
Worcester Pressed Steel Co., Worcester, Mass—Pressed steel parts.

Smith Gave San Jose a Show.

Although San Jose, Cal., has not a sufficient number of automobile dealers to make a large show possible, it possesses one dealer who is alive to his opportunities—Harrison P. Smith, Inc., agent for the Stoddard-Dayton, Pope-Hartford, Reo, Kisselkar and Baker. Smith held a show of his own on Thursday, Friday and Saturday, February 27, 28 and 29, and had factory representatives on hand to explain the features of the five cars on display. The garage was tastefully decorated, and several local concerns took the opportunity to serve free refreshments and dispense music. More than 5,000 persons were entertained during the three days the show was in progress and Smith booked several sales as a result. Other dealers expressed satisfaction over its effect in stimulating interest, while Mr. Smith is so well satisfied that he purposes an annual repetition.

Lincoln's Show Drew a Crowd.

Lincoln's first automobile show attracted a large crowd of Nebraskans to the Auditorium in that city last week. The show opened on Monday and continued until Saturday last, 29th inst. Nearly all the local dealers were represented, the cars on display being the Winton, Buick, Northern, Oldsmobile, Aurora, Maxwell, Jackson, Lambert, Glide, Rambler, Mitchell, Holsman, Baker, International and Fuller. The last named is made by the Angus Co., of Angus, Neb. The first car, made eight years ago, holds the distinction of being the first "made in Nebraska."

THE RUMPUS THE WOMEN RAISED

It Upheaves the San Francisco Dealers' Association—But Their Show Succeeded, and Wu Praised Them.

"Where is the man who has the power and skill
To stem the torrent of a woman's will?
For if she will, she will, you may depend on't;
And if she won't, she won't; so there's an end on't."

In this era of suffragetting and the equal-pay-for-equal-work movement, the poetic truism from the pillar erected on the mount in the Dane John Field, Canterbury, is particularly appropriate.

When the Automobile Dealers' Association of California some time ago decided that it would not hold a show in San Francisco this year, it reckoned without its nemesis—the Progressive California Woman. As was told in the Motor World several of the dealers in the association were in favor of holding a show, while others were against the proposal. Upon putting the question to a vote the opposers of the idea got the decision, but by a very small majority. Then the California Woman's Automobile Club heroically came to the rescue with a decision to hold a show, and as the organization of feminine mahouts had no strings to it, decided it would not ask a Mere Man's association whether or not it might hold a show. The very idea! What was to hinder the women from holding a show if they wanted to? Nothing!

When the dealers' association saw that many of its members intended to exhibit at the women's show and in fact had already secured space, a most remarkable resolution was passed. It was to the effect that those dealers who already had signed for space might exhibit just this once, but those who had not been so fortunate must positively not show their goods at the women's show under penalty of a fine and possible suspension from the association.

The result may be imagined. According to San Francisco advices the Automobile Dealers' Association of California is threatened with disruption. Many of the dealers who were thus shut out by the resolution of the association do not like the discrimination and the first outbreak occurred last week when Charles A. Hawkins, western manager of the White Co., sent a pointed letter to the association, withdrawing from it both as a member and as a director. In no gentle terms he called the managers of the dealers' combination 'dogs in the manger" and also reflected on their business judgment in regard to paying a man $700 for his services in connection with the dealers' show that originally was proposed, but later was called off. He also stated that the president and secretary of the association don't know much about automobiles, anyway, and the latter officer returned the compliment with a public statement to the effect that Hawkins had better attend to his business and not attempt to cast slurs on those who were residents of California when he was a "jay-hawking sewing machine agent in Texas." Another resignation came from A. B. Costigan, manager of the Pacific Motor Car Co.

Regardless of this dispute, the California Woman's Automobile Club seems to have made good with its show. It opened unofficially on Monday afternoon of last week, 2nd inst., with a big parade of decorated cars, headed by a brass band, two prizes being offered for the most attractive cars in line, with another lighted parade in the evening followed by the official opening in the big Coliseum, when Mrs. Fred J. Linz, president of the California Woman's Automobile Club ascended the platform and introduced Mayor Parker Lyons, of Fresno, as the inaugural speaker. The Mayor was followed by Wu Ting Fang, Chinese Minister to America, who complimented the women and said he was glad to see them succeed where men had failed, which statement was rather remarkable, coming as it did from the representative of a country where women always have been kept in the dark background. Minister Wu told of his experience of riding in an automobile in Washington five years ago and remarked at the progress made in automobile manufacture since that time. He caused laughter when he hoped some day to return to his own country in an automobile.

The women did not stop with two parades to advertise their show. By calling Monday night "Boulevard Night," when half of the proceeds were devoted to the boulevard fund that is being raised by the Automobile Club of California, they enlisted the help of that organization. To further stimulate interest in the show, a hill climbing contest was held during the afternoon on the steep hill that leads into the Buena Vista Park section. There were two classes for roadsters, with as many silver cups for prizes, and a large crowd witnessed the contest. Honors in the class for large machines fell to D. A. Bonney, who drove a Stearns up the bumpy stretch of more than a mile in 1:42. H. L. Ownesey, in a Winton, was second in 2:20⅗. In the class for smaller cars Edgar Mason, driving a Tourist, won the cup. Norman DeVaux, Auburn, was second, and Clarence King, Maxwell, had a walkover in the class for runabouts costing under $900. On account of the bad condition of the hill Wednesday's events were postponed until Thursday when inclement weather again made them impossible. On Friday the rain caused a third postponement and from last reports it is doubtful if the events will be held.

While it is to be regretted that the differences relating to the automobile show occurred to disturb the peace of the dealers' association, at the same time it is not to be denied that the women did re-

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markably well in securing as many cars as they did. The Motor and Accessories Association sanctioned the show so that it did not make any difference in the accessories exhibits. At the Coliseum last week 33 makes of cars were staged, as follows:

White, Locomobile, Stevens-Duryea, Winton, Maxwell, Tourist, Acme, Aerocar, Frayer-Miller, Lambert, Auburn, Marion, Woods, Haynes, Chadwick, Dragon, Renault, Glide, National, Gale, Overland, Corbin, Elmore, Heine-Velox, Queen, Taximeter Cab, Brush, Jewel, Imperial, Jackson, Pennsylvania, Rapid and Stearns.

Fifteen agencies, representing nineteen cars, abided by the resolution of the association and did not exhibit at the show. The cars which were not shown were:

Autocar, Buick, Cadillac, Packard, Cameron, Pullman, Ford, Mitchell, Northern, Peerless, Pierce Great Arrow, Pope-Hartford, Premier, Rambler, Reo, Stoddard-Dayton, Studebaker, Thomas and Oldsmobile.

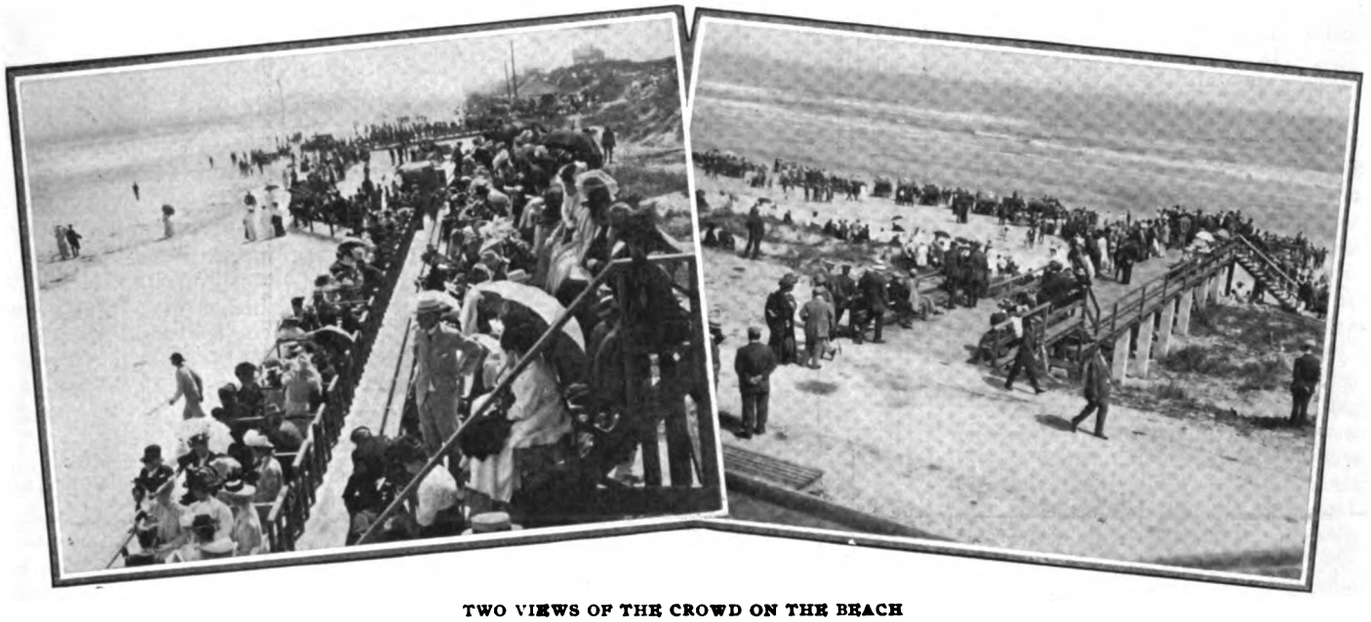
Dealers After the Insurance Men.

Cincinnati's automobile dealers are after those insurance companies that prevented the dealers' association from holding its annual show last month by threatening to cancel the policies of the Music Hall if a show was permitted within the building. The association has appointed a committee to ascertain the names of the insurance companies who made threats of the sort, and to discover the cause thereof. The dealers will then see if there is any objection to holding the show in April and if the companies persist, the tradesmen say that they will cancel their insurance in any such companies. It is said that the dealers are backed up in their move by the Cincinnati Automobile Club, but whether or not this is the case there is no question but that the dealers are in earnest in their endeavor to learn "what's what."

RECORDS FALL ON FLORIDA BEACH

Cedrino Sheds Some Glory on the Carnival —But Racers Were Few and Runaways the Rule.

The closing days of the Florida speed carnival, Thursday and Friday last, 5th and 6th insts., did nothing to pin its fame higher in the skies; and however strong the desire to make it appear otherwise it is evident, as it was stated last week, that the Florida beach meet has lost about all of its one time splendor.



TWO VIEWS OF THE CROWD ON THE BEACH

The only startling performance which occurred on Thursday, was a fast flight by Emanuel Cedrino, in a 60 horsepower Fiat car equipped with Continental tires, when he established a record of 256 miles by covering this distance in the race for the Automobile Club of America's trophy in 3 hours 21 minutes 27⅘ seconds, an average of 77 miles per hour. The closing day saw Maurice Bernin break the 100 miles record by 3 minutes, when he won a match race against S. B. Stevens who, by the way, is classed as an amateur and as such drove in the gentleman amateurs' race two days previously, while Bernin is a paid professional driver. Bernin's time for the 100 miles was 1:12:56⅕. So far as exciting sport goes there wasn't any. All the events were uninteresting runaways, and furnished none of the close finishes that have made other Ormond meets memorable.

The 256 miles race for cars weighing not more than 2,424 pounds for the Automobile Club of America trophy, which was run on Thursday, had only four contestants, Cedrino in the Fiat, Bernin in the 60 horsepower Renault, G. B. Blakeley in a 50 horsepower Christie, and R. G. Kelsey in another Christie. Kelsey professionalized himself by competing against these two drivers; he drove in the amateur race on Wednesday. The race was held over the full beach course of 16 miles, comprising eight laps at 32 miles each.

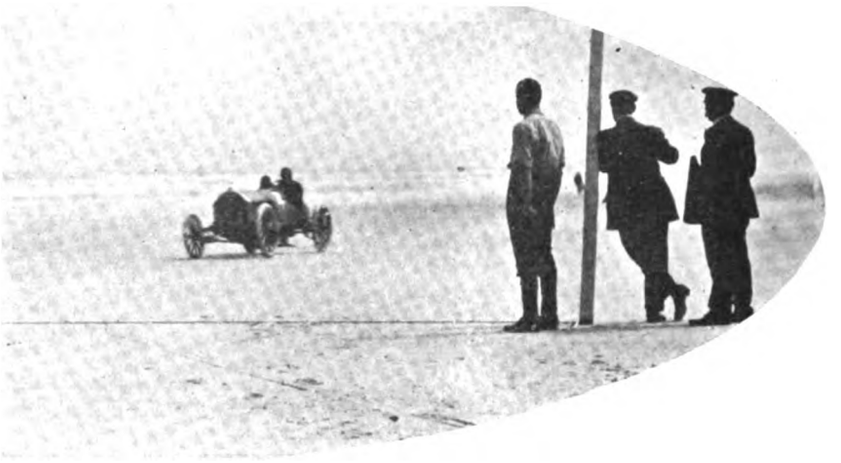
In the first lap Cedrino stopped to change a tire, and Bernin led at 32 miles in 25:27, Cedrino being then four minutes behind, with Kelsey two minutes behind him. In the second lap Cedrino regained the lead and held it from then until the finish. Bernin had a flat tire and changed it in the third lap and made a second change of tires in the fifth lap. Blakeley had trouble in the first lap and retired in the second. At 100 miles Cedrino's time was 1:21:39⅗, Bernin's 1:37:33⅗, and Kelsey's 1:38:27. When Bernin had his last tire trouble Kelsey passed him and although the young Frenchman made a fast run in the closing miles, he was just beat out for second place by twelve seconds. The following table shows the speed made by each of the three finishers on each lap:

	Cedrino.	Kelsey.	Bernin.
32 miles	:29:16	31:15	25:37
64 miles	54:14	1:01:58	55:22
96 miles	1:18:46	1:34:54	1:33:38
128 miles	1:43:11	2:03:55	1:57:49
160 miles	2:11:34	2:37:58	2:29:41
192 miles	2:34:48	3:08:03	3:17:49
224 miles	2:58:09	3:37:04	3:42:14
256 miles	3:21:27⅘	4:06:26	4:06:38

Driving at an average speed of 82.26 miles an hour Bernin, on a 60 horsepower Renault, won his 100 miles match against S. B. Stevens, in a Fiat, on Friday and broke the record for the distance. Bernin covered the century in 1:12:56⅕; the old record of 1:15:40⅖ was made by Walter Clifford-Earp two years ago.

The match was held over the full 16 miles course and Bernin had the better of the race from start to finish. At the 24th mile the Frenchman had a lead of 2 minutes 48 seconds over the gentleman amteur driv-

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AT ONE OF THE TURNS OF THE COURSE—TYPICAL VIEW AT AN "EXCITING" MOMENT

er in the Italian car while he gained somewhat in the next leg. Stevens' time at the finish was 1:23:59, or 11 minutes 2⅘ seconds behind Bernin.

The mile event from a rolling start resulted in a victory for Cedrino, who beat Bernin, the only other starter, to the finish by 100 yards. The time was 42⅘ seconds, which was announced as a record for middleweight cars.

The mile record trials concluded the four days' program, and the record of 28⅖ seconds remained unscratched. The best performance in these trials was made by Cedrino, timed in 35 seconds, with Bernin second in 39⅕. Kelsey in a Christie car was timed in 42⅘ in two trials and G. P. Parker, in a Benz car made it in 45⅗. The summaries:

100 miles match between Maurice Bernin (60 horsepower Renault), and S. B. Stevens (60 horsepower Fiat)—Won by Bernin. Time, 1:12:56⅕.

One mile open—Won by Cedrino (60 horsepower Fiat); second, Bernin (60 horsepower Renault). Time, 42⅘.

One mile record trials—Cedrino, 60 horsepower Fiat), 0:35; Bernin 60 horsepower Renault), 0:39⅕; Kelsey, (50 horsepower Christie), 0:42⅘; Parker (80 horsepower Benz), 0:45⅗. W. H. Wray, Jr., (14 horsepower Pengeot motorcycle), 46⅖, flying start; 50⅖, standing start.

Serving as a final wet blanket to the Ormond speed carnival, three, or maybe four,



CEDRINO, THE HANDSOME RECORD BREAKER

or possibly five cars are making a run down the east coast of Florida from Jacksonville to Miami. It is called an endurance run. There are seven prizes. The distance is 371.8 miles. The run started on Monday and is supposed to finish to-morrow (Friday). The first day's run was from Jacksonville to Ormond, 84 miles, and of the unknown number that started only two cars arrived at that place, the Cadillac runabouts owned by Charles Nolan and Dr. Stinson, respectively. On Tuesday, Nolan's Cadillac and C. F. Wheeler's Peerless reached Rockledge, 74.5 miles, the cars arriving there within an hour of each other. Nothing has been heard of the other cars up to the present time.

World's Records on Brooklands Track.

Although it was thought that the staggering record set up on the Brooklands track a few weeks ago when Charles Jarrott covered 50 miles in 36:05 76-100, an average of 83 miles an hour, would stand for some time to come, it did not remain on the slate two weeks. On the 19th ult., Newton, driving a 60 horsepower Napier, set out to break the two hour record. Fifty miles were covered in 35:07 36-100, an average of 85.4 miles per hour, and the time for 100 miles was 1:10:20 31-100, averaging 85.3 miles. In the hour 85 miles 555 yards were covered. Newton's time for 150 miles was 1:46:06 17-100, and in two hours he had covered 169 miles 615.6 yards, a performance that almost staggers belief.



WHAT HAPPENED TO ONE OF THE NON-CONTESTING CARS

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RECORD BREAKING AT ALTADENA

Apperson Climbs Hill at a 52½-Miles Clip—Derkum Gives a Sensational Motorcycle Performance.

Record breaking performances, a fast course, capable management and a big crowd, marked the third annual Pasadena-Altadena hill climbing contest held Saturday afternoon, 29th ult., by the Automobile Dealers' Association of Southern California. P. J. Q. Derkum, who broke several world's motorcycle records at a motorcycle meet in Los Angeles a week before, furnished the sensation of the day when he streaked up the hill in the marvelous time of 1 minute 17 seconds. This is at the rate of 65 miles an hour over a course measuring exactly 1.35 miles, and that rises from 3 to a 14 per cent. grade, besides containing three turns. The other sensation was the driving of Edgar Apperson, who drove two events in 1:36¼. This is at the rate of 52½ miles an hour, the fastest time ever made over the course by an automobile, but somewhat slower than the record-breaking flight made by Derkum on a two-cylinder motorcycle.

The course was in excellent condition and probably five seconds faster than at previous contests. The work of the Altadena Improvement Association was manifest, and chuck holes were conspicuous by their absence. That bugbear of former contests—the electric railway crossing—was bridged by a wooden platform, which allowed the cars to cross at full speed without bounding off the ground as they formerly did. The ten events were run without a hitch of any kind and were disposed of in one hour and thirty-five minutes. The course was well patrolled and the deputies had no trouble in handling the crowd of 5,000 or 6,000 people that lined the highway.

As only one car showed up for the first event it was scratched from the program and a special event for motorcycles was substituted, W. G. Collins and Paul J. Q. Derkum, both on two-cylinder Indians, appearing at the tape. This was the most sensational event of the day. Collins got the word first and was away like a shot, Derkum following fifteen seconds later. At the first turn Collins was obliged to make a wide detour and in doing so he grazed an automobile, his fingers getting a hard knock, while half of the handle bar was wrenched off. This did not seem to daunt him in the least and he continued with increasing speed. A few seconds later a similar experience befell Derkum. He also skidded on the turn and hit the fender of an automobile. According to Los Angeles advices one-half of the handle bar of his machine was torn off and his fingers were badly lacerated, but like Collins, he held his seat and continued to the finish, with blood dripping freely from his hand. The result is shown in the summary. Both Collins and Derkum made the fastest flight ever witnessed over that upgrade from the gardens of Pasadena to the poppy fields of Altadena.

The last two were the most thrilling of the automobile events. Six of the fastest cars in Southern California lined up for the event for roadsters costing more than $3,000. The Apperson, driven by Edgar Apperson, won easily in 1:36¼, with the Stearns second in 1:58. The last event was for the four cars that had made the fastest times in the previous events and was in the nature of a final heat to decide the real champion of the climb. It was unusual in that Apperson won again and duplicated his time made in the previous event to a fraction of a second. The Stearns was again second, but in better time than in the previous race.

All the events were closely contested. That for touring cars costing from $1,000 to $1,500 went to the Tourist in 2:41, and Leon T. Shettler's Kiselkar won in the class from $1,501 to $2,000. W. K. Cowan, Rambler, won a popular victory when he got the prize in the event for cars costing from $2,001 to $2,500. His time was 2:27. An Oldsmobile entered by the H. O. Harrison Co. took the next event in 2:25, while Shetler, in his Kisselkar pocketed another cup by driving up the hill in 2:22¾ in the event for roadsters costing $3,000 and under. The summary:

For Motorcycles.

1 Paul J. Q. Derkum, Indian 1:17
2 W. G. Collins, Indian 1:35

Touring Cars Costing $1,000 to $1,500.

1 Auto Vehicle Co., Tourist 2:41
2 Leon T. Shettler, Reo 2:54
3 Western Motor Car Co., Buick... 2:56

Touring Cars Costing $1,501 to $2,000.

1 Leon T. Shettler, Kisselkar 2:46¼
2 H. O. Harrison Co., Oldsmobile .. 2:51¾
3 Auto Vehicle Co., Tourist 2:52½
4 A. W. Gump, Jackson 2:55

Touring Cars Costing $2,001 to $2,500.

1 W. K. Cowan, Rambler 2:27
2 White Garage, Pope-Hartford ... 2:35
3 Leon T. Shettler, Reo 3:04
4 Elmore Motor Car Co., Elmore... 3:55

Touring Cars Costing $2,501 to $3,000.

1 H. O. Harrison Co., Oldsmobile .. 2:25
2 Auto Vehicle Co., Tourist 2:30½
3 Western Motor Car Co., Thomas. 2:40½

Touring Cars Costing $3,001 to $4,000.

1 Western Motor Car Co., Thomas. 4:37½
2 White Garage, White ....

Roadsters Costing $3,000 and Under.

1 Leon T. Shettler, Kisselkar 2:22¾
2 Stoddard-Dayton Motor Car Co., Stoddard-Dayton 2:32¼
3 Auto Vehicle Co., Tourist 2:41½
4 Leon T. Shettler, Reo 2:58¼

Roadsters Costing $3,001 and Over.

1 Edgar Apperson, Apperson 1:36¼
2 W. J. Batchelder Co., Stearns 1:58
3 Ralph C. Hamlin, Franklin 2:00
4 Western Motor Car Co., Packard. 2:09¾
5 White Garage, Pope-Toledo 2:20
6 Woodill Auto Co., Haynes 2:30½

Special for Four Fastest Cars in the Nine Events.

1 Edgar Apperson, Apperson 1:36¼
2 W. J. Batchelder, Stearns 1:54¼
3 Ralph C. Hamlin, Franklin 1:57¾
4 Western Motor Car Co., Packard. 2:12

The Message Delivered to Loughborough.

The message has been carried to Loughborough—Colonel Robert H. R. Loughborough, commander at Fort Leavenworth, Kansas. The message, which took the form of a letter of salutation from General Frederick Dent Grant, in command at Governor's Island, N. Y., was started from New York City on Tuesday, 18th ult., in an attempt to demonstrate the value of the automobile in carrying dispatches between army posts in time of war. In this case the message was carried in a 30 horsepower Studebaker, driven by relays of drivers. As has been detailed at length the car encountered heavy obstacles to its progress in the shape of huge snowdrifts between New York and Chicago, and after leaving the Windy City got into deep mud that was even worse than the snowdrifts. The further it went, the deeper became the mire and it was only by digging their way by inches for two days through two feet of heavy mud near Atchison, that the Studebaker crew managed to reach Fort Leavenworth at 11:32 o'clock Saturday morning last, 7th inst., having been exactly 18 days 2 hours and 32 minutes on the road. The entire garrison turned out to escort the mud covered car and its drivers into the fort.

Hudson County Club Plans Active Work.

The Hudson County Automobile Club, which has its headquarters in Jersey City, N. J., held its annual meeting last week, at which it was decided to join any movement against unfavorable legislation at Trenton. The following officers were elected: President, J. V. Z. Anthony; vice-president, John P. Landrine; secretary-treasurer, F. D. Laughlin; directors, J. H. Edwards, H. P. Pond, Herbert Scott, E. M. Dixon, and Dr. L. A. Opdyke. The following committees were also appointed: Membership—H. P. Pond, Alfred H. Howe, E. P. Dixon; good roads, George E. Blakeslee, J. H. Edwards, William E. Smith; auditing, Herbert Scott, E. B. Kierstedt, Dr. W. L. Pyle.

Spokane Club Changes Name.

Henceforth the Spokane (Wash.) Automobile Club will be known as the Spokane Motor Club, the change in title being effected at the last meeting. Louis Schermerhorn was elected president and Dr. C. B. Setters was chosen vice-president. W. S. Dulmage received a majority of votes for secretary, but as he declined the office was left unfilled for the present.

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JERSEY MOTORISTS SPOKE PLAINLY

Convention of Club Delegates Discusses Proposed New Laws—Senator Frelinghuysen Replies to Questions.

Although some of the less hopeful individuals had prophesied that the presence of State Senator Joseph S. Frelinghuysen at the conference of delegates of the automobile clubs of New Jersey, relative to the iniquitous amendments to the present automobile law which the senator is endeavoring to have passed, held in Newark last Friday night, 6th inst., would have a tendency to make some of the delegates bashful and afraid to unburden their minds, such was not the case. Of the more than 300 representatives present each was eager to give Senator Frelinghuysen his opinion of the law and the proposed amendments.

The resolutions that were passed favored the law compelling all vehicles to carry a light at night, which is Senator Frelinghuysen's amendment to the good roads act and which, by the way, already had been passed by the Senate. His other measure amending the crimes act, making it a misdemeanor to throw glass or other sharp substances upon the highway, and also his efforts to compel justices of the peace to pay over to the States promptly all moneys collected in fines, were also commended and resolutions were passed accordingly.

Other parts of the amendments were opposed by the automobilists, who adopted resolutions favoring the extension of free tourist privileges to non-resident motorists; opposing the proposed license fee, and declaring for an increase of the speed limit to 30 miles an hour. Resolutions also were passed commending Commissioner J. B. R. Smith for his administration of the department of motor vehicles, and condemning the proposed plan to separate the department, and also one opposing a change in the dealers' license clause.

As is quite generally known, the amendments introduced by Senator Frelinghuysen consist of a sliding taxation of vehicles based upon horsepower, from $3 to $100 per year; a sliding scale for drivers' licenses, from $1 to $25; the granting "admission tickets" to non-resident motorists to use New Jersey's roads, at a cost of 50 cents per six days, and the abolition of manufacturers' and dealers' blanket licenses, besides several other minor changes.

W. C. Crosby of East Orange, N. J., opened the meeting and stated that it had been called to discuss the proposed amendments and to allow the originator of them to hear the automobilists' opinions. Each point in the proposed amendments was discussed at length and each of the eight resolutions were adopted unanimously.

Senator Frelinghuysen did not appear in the least disturbed by the criticisms, some of which were extremely harsh. He joked with the automobilists and thanked them for their frankness. He was hailed as an automobilist and at the same time berated for his political ambition in playing for the farmers' vote, notwithstanding his insistence that politics should be eliminated from the question of motor vehicle legislation, and went on to explain that in framing the amendments he was actuated only by his idea of the need of the people at large, and that Governor Fort's suggestions were in accord with his own opinions.

After finishing his remarks, the Senator was asked by Dr. J. N. Faulkner, of the North Jersey Automobile Club of Paterson, if he had ever violated the 20 mile speed ordinance.

"I might ask the doctor the same question," responded the Senator.

"Answer mine first," retorted Faulkner.

"Never wilfully, and not knowingly," was the answer from the Senator, which was greeted with laughter. Dr. Faulkner's only answer was that he had heard that the father of the automobile law traveled faster than 20 miles an hour every time that he went out in his car. "He ought to know by this time," said the doctor, "that it would be impossible to keep within the limits."

Richard C. Jenkinson stated that the Newark Board of Trade was interested in the question from an industrial standpoint. He said that the automobile industry was of vital importance to the city and State from the fact that every part of a motor car was manufactured in Newark and that thousands of people were kept employed and added that although there were members of the Board who were opposed to automobiling, the organization was willing to take sides with the automobilists in their fight against unjust legislation. Mr. Jenkinson criticized the law which shut out tourists from other States which allow the Jerseyite the free privilege, but Senator Frelinghuysen did not explain how much he paid in taxes to the State of New York when he maintained an office in New York City and an uptown home and operated an automobile in New York when fighting so vigorously for the automobile law now in force in New Jersey. The Senator's letter heads at that time bore a New Jersey address, and appeared to be his chief qualification as a resident of that State.

Bingham Wants to Select Police Cars.

Commissioner Bingham, of the New York Police Department, is not so anxious as he once was to purchase motor cars at public letting. He desires to obtain two more of them at a cost of not to exceed $8,000, and has asked the board of aldermen to permit him to buy them without advertising for bids. He says such action is necessary as the five passenger touring cars desired are "manufactured under patents." It is generally understood that the cars which the Police Department has been led to desire are Loziers.

RESURRECTION OF AN OLD BUGABOO

Outcry About Automobiles Damaging Roads an Echo of Early Bicycle Days — Page from History.

If, at this time, any person attempted to assert that the bicycle caused injury to the roads, probably he would be considered a candidate for an insane asylum. If the politicians are to be believed, it is only the automobiles that do damage to the highways. That this latter cry merely is in the nature of history repeating itself is well instanced by the reproduction of a letter which appeared in a Terre Haute (Ind.) paper in 1886, and which reflected the official opinion of that date, which was to the effect that the 50 pound bicycles of that period were destroying the roads exactly as the 5,000 pound automobiles of to-day are accused of doing. The letter in question, signed "Cyclist," was as follows:

"Editors Gazette—Yesterday's issue states among the "Court House Echoes," that the county commissioners have asked our county attorney for an opinion in regard to prohibiting bicycles from being used on the grade west of the river bridge, giving as their reasons that such bicycles are cutting up the splendid roadbed of said thoroughfare. The commissioners have evidently never been near enough to a bicycle to ascertain that a 'soft rubber tire' encircles the felloes of each wheel. In what manner that soft rubber can cut up a hard roadbed is as yet an unsolved mystery, which our worthy commissioners can probably explain best. It may just as well be claimed that one can cut plate glass with the end of their finger, with just as much plausibility.

"The commissioners could have saved Attorney Long the trouble of looking up the law on this subject, as scores of test cases have been tried before the courts in as many different localities and states, and (with but one single exception) the decisions have been to the effect that a bicycle is a 'carriage used as a means of conveyance, consequently is entitled to the same privileges and restrictions as other vehicles used on our public highways.'

"Not wishing in the least to question the sincerity of our commissioners in this matter, it has been left for them to be the 'first' to put forth this most ludicrously absurb plea of bicycles cutting up hard roadbeds; therefore they ask counsel if these bicycles can be kept off a certain road."

Warren Automobilists Form a Club.

Automobilists of Warren, Ohio, have formed the Warren Automobile Club with the following officers: President, W. H. Dana; secretary, Harry J. Love; treasurer, Dan A. Geiger. The club will institute an active campaign for new members.

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AMERICAN CAR AT BITTER CREEK

Its Long Lead in New York-Paris "Race" Bitter for Europeans—Plan to Ship the Cars is Forbidden.

With E. Linn Matthewson in the driver's seat, Edward Schuester at his side, and Captain Hansen in the passenger's seat, the Thomas car reached Bitter Creek, Wyoming, at 9 o'clock last night (Wednesday) on its way to Paris, having covered 2,300 miles from New York City. The Italian Zust car, in charge of Sirtori, was reported at Ogallalla, Neb., 1,878 miles, with the De Dion, St. Chaffray at the wheel, at Boone, Iowa, nearly a thousand miles behind the American car. The German Protos car, which is now in command of Lieutenant Koeppen, Knape and Maas having got their fine feathers ruffled and started back to Europe, was reported from Cedar Rapids, Iowa, 1,262 miles. Unfortunate Godard is laid up at DeKalb, Ill., with a broken sprocket. The Motobloc car, which was the only one equipped with solid tires, has been having all kinds of trouble over the rough western roads, and it is reported that Godard will equip his car with pneumatics before proceeding further. All the other cars are fitted with pneumatic tires, those on the leading Thomas being Diamonds.

It has been remarked that Godard evidently has seemed in no hurry to cross the continent, being content to remain far in the rear. This week an explanation was received from Paris. Since Godard left Paris, the report states, he has been sentenced to eight months' imprisonment and the repayment of 5,000 francs alleged to have been obtained under false pretence during the Pekin-Paris trip last year. On account of this Godard is in no hurry to reach Paris.

The Thomas car has been making good progress since it left Cheyenne, Wyo., last week. At that place, Montague Roberts turned it over to E. Linn Matthewson, of Denver, who enjoys a reputation as a race driver. Montague Roberts, who piloted it that far returning to New York City, as he is entered in the Briarcliff trophy race in April, and the Grand Prix in July. The Denver driver will take the car to San Francisco, when it will be given over to Schuester and Captain Hans Hansen, who as stated last week, forsook the De Dion crew and made arrangements with the Thomas company to pilot the American car through Siberia, which country is thoroughly familiar to him.

It developed this week that at least three of the foreigners had no intention of traveling all the way across the American continent by the power of their own cars. There existed, according to reports from Chicago, a sort of "gentleman's agreement" to ship the cars by rail to Seattle or San Francisco and then take the boat to Alaska, thereby starting from there on even terms. When this determination was cabled to Paris for confirmation the answer showed that at least the Parisian newspaper promoting the contest is "on the level." It was brief and to the point, and made it plain that the first car that took a railroad train would be disqualified. Naturally, it was a disappointed lot of foreigners that reluctantly set out after the American car far in the lead.

With the exception of the American entrant, all the other contestants have reported trouble. The De Dion car was laid up three days at Cedar Rapids with a broken crank shaft, and had more trouble at Marshalltown, a few miles further on. The Zust car broke a sprocket and a spring but was repaired in the Union Pacific shops at Omaha. The squabble that arose between the members of the German crew on the Protos car was of the same nature that separated St. Chaffrey and Hansen a week previously. Each wanted the credit of doing all the work, but as Lieutenant Koeppen was recognized as the leader of the party, having been commissioned by the German military authorities to take the car through to Paris, he got his name in the papers more often than did Knape and Maas. The latter two then "got their dander up" and are now on their way back to New York to return to Germany.

According to E. Leroy, Pelletier, who last week returned from abroad, the New York to Paris race, already a joke on this side of the water, is going to cause much sadness in Europe. It was expected to prove the immense superiority of the European cars, and to bolster the market for them on this side of the water. Unfortunately, the cars that were sent across to

THE MOTOR CAR AS AN AMPHIBIOUS CRAFT.



STREET SCENE IN DETROIT DURING A RECENT FLOOD

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make the run were built for the fine roads of Europe, and not for the ruts and trails of American wildernesses. Hence their utter failure. Mr. Pelletier spent three years in Alaska, and laughs at the idea of driving an automobile in that country.

Favors Automobiles for Newspaper Mail.

"There is one class of mail matter that should not be neglected and that cannot be neglected," declared Postmaster Morgan, of New York City, at the annual meeting of the New York State Association of Postmasters, held on Wednesday last, 5th inst. "That is the class which includes the newspapers and periodicals. As we deliver that mail now we have to depend upon wagons. It is my opinion that automobiles should be used. Whether the automobile can be relied upon for this service will be up to the department at Washington, but I believe that the automobile has reached a point of service that warrants its test as a factor in the postal service of the United States." Postmaster Morgan emphasized the fact that if the government does not authorize the use of automobiles for delivering newspapers and other bulky mail matter it will have to discover some other swifter means than by delivery with the slow-going horse and wagons.

Nixon's Dream of Rapid Travel.

It was a rosy view of the automobile's future that Lewis Nixon spread before the members of the Richmond County Automobile Club in his after dinner speech at their annual banquet at St. George, Staten Island, on Saturday night, 7th inst. "I predict," he said, "that in the near future automobiles will be an accompaniment of every home, the same as the old red wheeled buggy. The great department stores will have automobiles with bodies which may be removed from the chassis and another body placed thereon and no time lost."

Then Mr. Nixon proceeded to forget all about speed limits, especially in New Jersey, where scorchers encounter justice in its sternest aspect, for he added to his predictions the declaration that "in a short time cars will be built capable of making a speed of 175 miles an hour, so we may expect to travel from New York to Philadelphia in a few minutes."

Newark Already Talking of Next Show.

Because of the success of its recent show, the first of its kind held in Newark, N. J., the New Jersey Automobile Trade Association and the New Jersey Automobile and Motor Club already have begun to talk about holding a show in 1909. It was stated this week that arrangements already had been made to hold the next exhibition in the Essex Troop armory, which will be completed some time this year, the exhibition hall at Electric Park having proved by reason of its limited space entirely inadequate for the show which was held there this year.

TIRE MAKERS HANDLE TAXIMETERS

American Device Placed on the Market in a Combination Offer—Details of the New Appliance.

First of the American taximeters to be completed and put on the streets is the one made by the Westchester Appliance Co., which it transpires will be marketed through the Ajax-Grieb Rubber Co., of which Horace De Lisser is president. Announcement of this fact has served to bring



TAXIMETER WITH FLAG UP

out that the latter company is making a combination offer on tires and taximeters to owners and operators of taxicabs.

The first order reported is for 2,600 of the instruments at a fare of 50 cents a mile, with another order pending where the charge will be 30 cents for the first half mile, and 10 cents for each additional quarter mile, which is the prevailing rate in New York. On both of these orders there is a charge of 10 cents for each six minutes of waiting. The higher priced meter is to be for a company which figures on a service de luxe.



TAXIMETER WITH FLAG DOWN

The Westchester taximeter indicates the number of trips; the total cash for the day; the total number of miles covered and each individual fare. Moreover, by a unique device it is arranged that when there is any discussion regarding fare after the occupant leaves the cab, there is no chance of the driver allowing the fare to be running up. This is accomplished by a further lowering of the flag.

The taximeter is made under patent No. 760,125, owned by the Taximeter and Cab Company of America, and the selling rights are controlled by the Ajax-Grieb Rubber Co. It will be handled by all branches of this company which has its New York headquarters at Fifty-seventh street and Broadway.

The ilustrations show two views of the taximeter reproduced from a complete instrument.

His Fine Came Back Fourfold.

Being fined $20 for exceeding the speed limits and making a profit of $60 by the adventure is not the experience of every automobilist. It did happen, however, to Richard Stevens Eskridge, a Seattle lawyer who was touring in Southern California. A motorcycle policeman started the story when he arrested Eskridge for speeding in the suburbs of Los Angeles. Eskridge fumed and swore, but to no avail. The officer was obdurate and the Seattle man was compelled to give bail for his appearance in court next day. Voicing maledictions upon the Los Angeles county officials Eskridge appeared in court the next day and had to leave $20. He did not have the change, but threw down a $50 bill and in exchange was released from custody and received a number of pieces of coin, including a $10 gold piece. The gloom began to lift after that. Eskridge walked into a curio store to purchase a souvenir of his trip and after a selection laid down the $10 gold piece in payment. The curio dealer examined the coin closely. Then he became interested. Inquiring the cause of the agitation Eskridge was told that the coin was dated 1849 and was one of the very rare coins minted in California. The talk ended when the dealer offered Eskridge $80 for the coin. Eskridge figures that the $20 paid for speeding his car was well invested.

Big Roundup of Scorchers.

Donning plain clothes, New York City's motorcycle and bicycle police force, went out for a "killing" an Thursday last, 5th inst. As a result of the hunt 61 chauffeurs were bagged, most of whom were bound over for trial in Special Sessions. The only driver let go was Dr. Joseph A. Mulholland, who explained that he was trying to beat the stork when arrested. Magistrate Breen thought the arrest of the doctor was rather one-sided as the stork had not been arrested also, so he let Dr. Mulholland go.

Royalty Blows the Gabriel Horn.

If it were located on "the other side," the Gabriel Horn Mfg. Co., Cleveland, O., would be able to adorn its stationery with a whole row of royal crests. According to their advices, the Gabriel horn has found its way into the royal garages of the United Kingdom, Germany, Prussia, Spain, Italy and Russia.

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FOR TESTING COIL PERFORMANCES

Heinze Describes His Apparatus at Boston Meeting of Engineers—How It Determines Ignition Requirements.

To the average motorist, as, indeed, to many a self-styled expert, the ignition system of the modern car is an all but impenetrable mystery. Hence the average individual with the troubles of his own which, happily are fast vanishing with each year's improvements, is not properly equipped to appreciate the difficulties which beset the path of the manufacturer of ignition devices. The nature of these difficulties and some of the methods which are employed in overcoming them are set forth in a paper read by J. O. Heinze before the Society of Automobile Engineers at its Boston meeting this week.

Speaking of the ideal requirements for igniting the charge in the internal combustion motor, the author remarks that "what is needed is a very hot spark, of great frequency, positive, and of a certain length, to penetrate the gap in the spark plug which is generally from 1-64 to 1-32 inch." As the compression is increased, it is necessary further that "the spark should be longer and of a higher voltage, or to be more precise, it requires a good ½ inch spark to jump a 1-32 inch gap at 90 pounds compression, and only a ¼ inch spark at 60 pounds.

"The heat of the spark depends entirely upon the watt energy consumed in the arc of the gap, or in other words, the sum of the voltage multiplied by the amperage passing through and across the spark gap," he continues. "But since the voltage across the spark gap becomes practically nothing after the resistance of the gap is broken down and the arc formed, the amperage then depends entirely upon the ohmic resistance of the secondary of the coil and the total energy induced in the secondary, and this energy again depends upon the mass and quality of iron in the primary, the ampere turns on the primary core, producing a certain total magnetic flux and the rapidity with which the primary current is interrupted, and from this analysis it would appear that the larger the iron core, or the larger the coil, the hotter the spark to be obtained. Quite true, but we must figure on the frequency of the spark necessary to operate an engine at high speeds, and here we meet with a limitation in the size of spark coils practical for gas engines.

"We find that we have got to magnetize and demagnetize the primary iron core to produce an induced current in the secondary and as the iron core and its vibrator have a fixed time lag, depending upon the mass of iron in the core, the mass of the vibrator and the length and tension of the vibrator spring, we can therefore produce only a certain number of sparks per minute in a certain size coil, as a certain frequency is necessary for a definite engine speed. This frequency would then determine the size of the coil, and the size of the coil determines

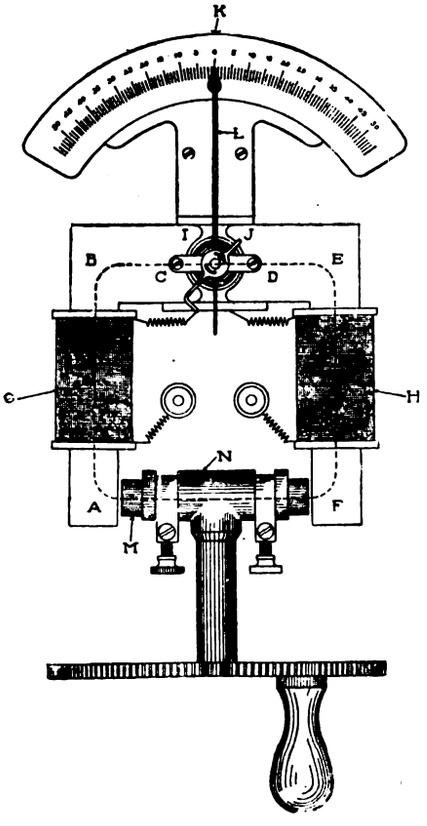


FIG. 1—HYSTERESIS TESTER

the total electrical energy which can be produced by it in the heat of the spark."

With a magneto, as he explains, no such limitations exist. Furthermore, he states the opinion, based on experience, that the "spark coil using a vibrator operated by either a battery, magneto, or small electric generator, will never produce the same results, or efficiency, produced by a magneto operating through a mechanical electrical make and break in the cylinder or on the magneto and stepping up the voltage for jump spark ignition through a non-vibrating induction coil."

For the purpose of studying the requirements of the automobile ignition coil, as well as of testing the efficiency of various kinds of coils, the author has contrived

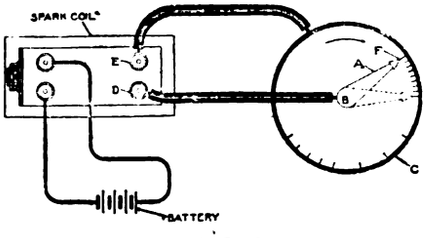


FIG. 2—FREQUENCY INDICATOR

and employed several forms of special apparatus. Of that shown in Fig. 1, he says:

"For the purpose of testing the magnetic quality of the iron and its ability to quickly magnetize and demagnetize, I designed . . . . . a 'hysteresis tester,' which consists of an iron core, A, B, C, D, E, F, of U-shape. On the cores A, B, and E, F, are wound small coils G and H, and between the pole pieces, I and J, is mounted a small circular iron core. Around this core moves a small coil of wire pivotly mounted to which is fixed an indicating needle, L, moving over a graduated scale, K. Small non-magnetic clock springs are secured to the coil pivot and keep the needle at zero. A direct current from a battery producing a certain number of milliamperes passes through the moving coil on its pivot and through the coils G and H in series. The iron core, M, of the spark coils to be tested is revolubly mounted between the cores A and F and completes the magnetic circuit.

"If we now pass a certain number of milli-amperes through the coils G and H and the pivot coil, the iron core to be tested remaining stationary in the position shown in the diagram, we then get a certain deflection of the needle, L, over the dial, K. If we now rotate the iron core, M, about its axis at a fixed number of revolutions we then get a new reading on the scale. The magnetism generated by the current in coils G and H and passing through the rotating iron core in the direction as indicated by the dotted line, reverses in direction through the rotating core twice during every revolution. If we now rotate this core 2,000 revolutions per minute we would get 4,000 reversals of magnetism. The number of degrees of deflection of the needle on the scale depends upon the strength of the magnetic field, and if the iron core does not readily demagnetize and magnetize during its revolutions it would naturally reduce the total strength of the magnetic field and the indicator would show a small reading on the scale. So by this method we can show absolutely whether an iron core is susceptible to rapid magnetic changes necessary for producing a coil to give a great frequency of sparks per minute, and for the purpose of seeing that our iron is twice alike, for if it is not, repeated annealing will usually make it so.

"To test the frequency of the sparks from a coil I designed the instrument shown in Fig. 2, which consists of a rotating needle A, on its axis, B, within a graduated ring, C, of a known diameter and divisions. One end of the secondary, D, of the coil connects to the rotating needle, A, and the other end of the secondary, E, connects to the ring, C. The needle, A, at its point, F, is separated ¼ inch from the ring, C, so that sparks leap across this gap from the point, F, to the ring. If we now rotate the needle a certain number of revolutions and we have a certain circumference in the ring, by multiplying the number of the sparks per inch, times the number of inches in the circumference of the ring, times the number of revolutions of the needle, we then get the number of sparks per minute.

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"Fig. 3 is an instrument for measuring the approximate temperature of the spark of different spark coils and magnetos. This is not determined in Fahrenheit degrees, but in heat units. The instrument is designed on the principle of utilizing the expansive effect of a hot wire to move an indicator needle over a graduated dial, and is constructed as follows: A fine copper wire is stretched between the metal contact posts, A and B, the tension of this wire being regulated by the adjusting screws, K, and K'. To the center of the wire at C, is fastened a small copper stud which comes to within 1-32 inch of the metal plate D. The secondary terminals of the spark coil are connected to the binding posts L and M, completing its electrical circuit through the copper wire N, across the gap at C, to plate D.

"If a certain amount of primary current, determined by an accurate ammeter, is passed through the coil, we will get a continuous secondary spark between the stud C, and the plate D. This spark heats the stud and in turn heats the copper wire which expands and causes an elongation in the direction of the arrow E. To the center of the wire and the stud, C, is also fastened a small wire, to the end of which is fastened a silk thread, wound around a pivot and kept taut by a small spring, H. To the pivot is fastened an indicator needle moving over a dial, I, in the direction of the arrow, G, when the wire is expanding, and in the opposite direction when contracting, giving us a certain reading depending entirely upon the temperature produced in the copper wire by the heat of the spark at the gap, C. When the rate of cooling, or radiation, of the wire equals the production of heat from the secondary current, the needle will then come to a stop and no fixed time measurement is necessary. In order to test various coils, it is first necessary to see that they all consume the same amount of primary current at the same voltage. . . . .

"Fig. 4 is an instrument for measuring the amount of lag in the secondary spark from the moment the primary current is closed, and my object in designing this instrument was to clear up a prevailing idea in the minds of many automobile operators, that by advancing the timer an early ignition is produced when the piston is still coming up. From the many experiments which I made in ignition timing, I found that it was impossible to advance the spark more than 10 degrees at an engine speed of 1,000 r.p.m. without observing a slight decrease in power; if the advance was carried further, the engine would gradually come to a stop, or kick back. The higher the engine speed the more the spark can be advanced, but no such advance is possible as would be indicated by the position of a timer apparently capable of a movement of 90 degrees, or more. This great amount of advance of the timer is necessary to overcome the enormous lag in vibrating spark coils, but no such advance is possible with a magneto, for the secondary spark takes place immediately at the moment of the primary current interruption. The only

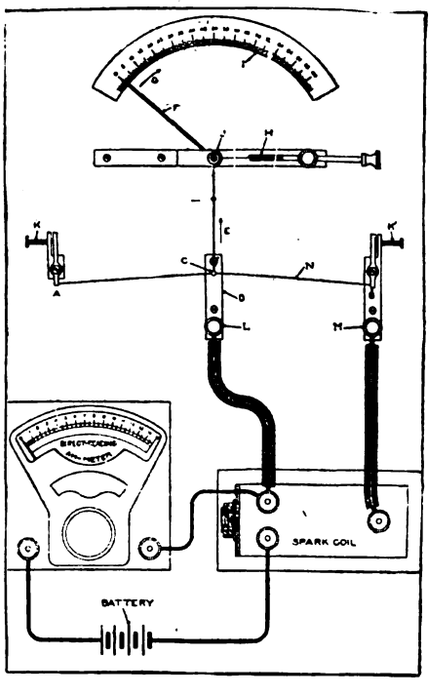


FIG 3—HOT WIRE PYROMETER

lag present is entirely magnetic, and there is none in the contact, for the mechanically operated contact breaker in a magneto increases in speed with the engine, but the vibrator of a coil has a fixed lag, or in other words takes just as long to start vibrating, whether the engine is running 100, or 2,000 revolutions and it should respond more rapidly at high speeds than at low, but it is apparently impossible to make such a magnetically operated make and break in the form of a vibrator.

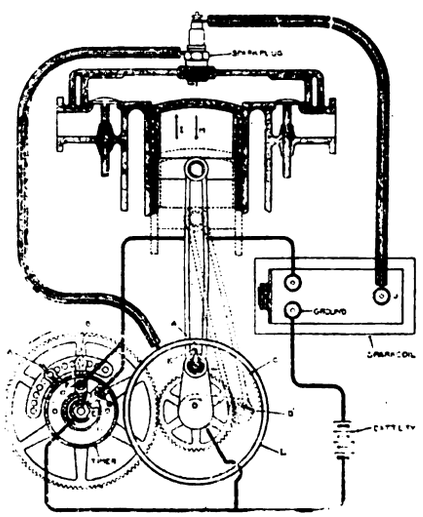


FIG. 4—TESTER FOR IGNITION ADVANCE

"The instrument for demonstrating this advance spark theory consists of a model of a gas engine with its cylinder and piston, connecting rod and crank, but secured to the crank pin is a small pointer, K, which rotates within a metal ring, L, clearing it about ¼ inch. The wires from the secondary of the spark coil are connected to the insulated metal ring, L, and to the crank and pointer, K, so that the spark will jump from the pointer K, to the ring L, while the engine is in operation. We now set the timer in such a position that in turning over the engine slowly by hand in the direction shown by the dotted lined crank, we will get a spark when the crank is at the point of maximum compression, as shown in the diagram. If the engine is now speeded to 1,000 r.p.m., without moving the timer, we would find the spark jumping across at B, or in other words, it would be 90 degrees late. This lateness of the spark is entirely due to the lag of the vibrator and the magnetic lag of the iron core, and we must advance the timer an equivalent amount to balance up the two. By varying the speed of the engine, the spark moves from the position A' to B'. My object in designing this instrument was to prove that the ignition in a gas engine should take place at the highest point of compression, and it approximately does so when the engine develops its greatest power, also that the time required to ignite the charge is very small and never requires more than a few degrees of advance."

Effect of Bad Weather on Sales.

"You would hardly expect weather conditions to have any material bearing on the sale of a car, yet in many a case it has been my experience that an unexpected 'bad' day has ruined my chances of a sale which otherwise might have been almost a foregone conclustion," says a New York salesman of no small experience in such matters. "It is not as you might at first suppose, that bad weather makes bad roads, and bad roads interfere with the smooth demonstration we always used to be so crazy to give the 'prospect.' The fact of the matter is that when we get hold of one of those pestiferous 'doubting Thomases' who never can quite make up their minds between the respective merits of the Nile or the Congo cars, we always dread a rainy or snowy day. For just as sure as one comes, some 'friend' will get hold of him and point out the advantages of some other machine. Whereas if it is pleasant, we can generally swing him our way."

San Francisco Dealers Schedule Tests.

At its meeting last week the Automobile Dealers' Association, of San Francisco, decided to hold a hill climbing contest in or near the city on April 11th, a two days' endurance run around the bay district on May 30th, and a four days' reliability run to Los Angeles from September 6th to 9th, inclusive. Eight new members were admitted as follows: The Pope Agency, Continental Tire Agency, G & J Tire Co., Morgan & Wright, C. F. Splitdorf, Prest-O-Lite Co., Fisk Rubber Co., and the Autocar Co.

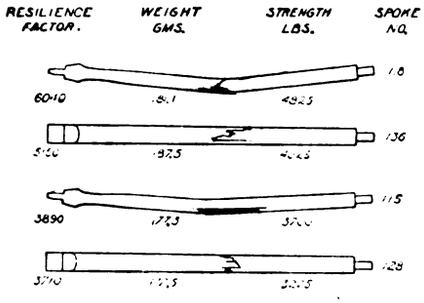
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RED HICKORY PROVES ITS VALUE

Officially Tested Together with the White Variety—Important Error Found in System of Grading.

No small amount of anxiety is being felt in the ranks of carriage and wagon builders owing to the rapid depletion of the forests. In this connection recent tests carried out by the Forest Service of the United States Department of Agriculture with the co-operation of the National Wagon Manufacturers' Association of America, the Carriage Builders' National Association, and the National Hickory Association at the laboratories of Perdue University, are particularly interesting.

As a matter of fact, it was demonstrated that the present grading system involves



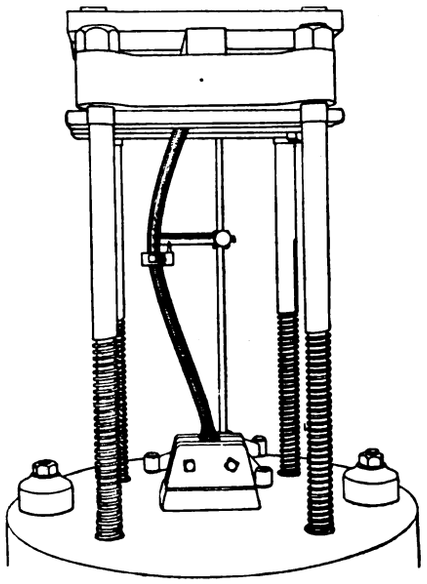
HICKORY SPOKES AFTER TEST—GRADE A

an error of more than 50 per cent., due largely to "the traditional prejudice and consequent discrimination against red hickory." Incidentally, the experiments afforded a most convincing demonstration of the value of laboratory tests in conjunction with the selection of woods for the work of vehicle construction.

The particular bearing of these trials upon the automobile industry is found in the investigations applied to the selection and trial of spokes. These trials, while applied only to spokes such as are used for light buggy construction, are particularly suggestive, as showing that the supply of available material is actually less limited than commonly is believed.

The direct object was to test the correctness of the present system of grading hickory buggy spokes and to ascertain the relative strength and toughness of red and white spokes. To this end 500 sample spokes were procured and were graded at the factory by experienced foremen, the grades being packed separately in the usual order, A-white, B-white, C-white, C-red, C-mixed, etc. The spokes were tested in the manner indicated in a general way by the accompanying figure.

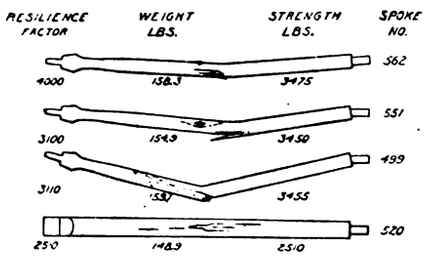
The spokes, which were of 1-inch size, were cut to 21 inches in length, were tenoned on the rim end, and the tenon was inserted in a hole in an iron block clamped to the movable head of the testing machine. The heel of the spoke fitted into a second block resting on the platform of the testing machine. With the spoke mounted in this fashion it represented a column with the rim and hub ends held in the same manner as in a wheel. The amount of bending or transverse deflection at the center was shown by a pointer attached to the



TESTING MACHINE IN MOTION

spoke, and arranged to move over a horizontal graduated scale. During the test the load at the first visible failure and the maximum load were noted, together with the corresponding deflections at the center, and in each case the test was continued until the spoke had reached a deflection of 2 inches at the center. All spokes were thus subjected to the same conditions.

The factor representing the value of a spoke should include both strength and toughness. The greatest load held up by a spoke is a measure of its strength, and the amount of bending in a spoke when the first crack occurs is a measure of its toughness. The product of these two quantities gives

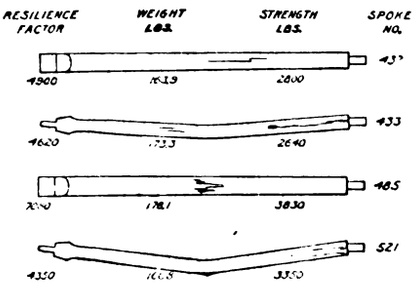


SPOKES DEFECTIVE NEAR CENTER

a factor representing both strength and toughness. It is called the resilience factor. The various factors measured or computed in the tests were thus; the weight of the spoke; maximum load, that is greatest load sustained by the spoke; deflection in inches, at maximum load and at first failure, or amount of bending at the center under the maximum load and at the time of first failure; and the resilience factor, or the product of the maximum load multiplied by the deflection at first failure.

From the general results obtained, it appears that the average weight and the average resilience factors of the A-white spokes were both considerably higher than in the other grades. A wide range between the maximum and minimum value for the resilience factor in any grade is noticeable, showing that the quality of the spokes varied in each grade. For instance, it is observable that the C-red spokes have a higher resiliency than either the C-mixed or the C-white. In the same way the D-red spokes have a higher resilience factor than the D-mixed or E-white.

In the first of the accompanying figures typical fractures are shown, together with the observations pertaining to the spoke under test in each case. Only clear spokes were used in this portion of the investigation. In the two succeeding figures, are shown the results of tests upon flawed



SPOKES DEFECTIVE NEAR END

spokes, with weaknesses at the ends and near the center, respectively, and illustrating the relative importance of such flaws, when the spokes are subjected to radial load.

It should be observed that in these trials no account was taken of the tangential strain thrown upon the spokes of the automobile driving wheels, which is in some cases very high, and would naturally tend to accentuate the deflection caused by the radial load.

Of defective spokes, the official report of the foregoing tests observes that five general classifications are commonly to be found, namely: "Iron streaks, bird pecks, cross grain, knots, and wormholes. A spoke containing a wormhole is dangerous, as it is impossible to tell to what an extent the spoke has been bored on the inside. Iron streaks are supposed to be caused by the infiltration of foreign coloring matter through bird pecks. Iron streaks and bird pecks, when they show only slightly, apparently do not affect the mechanical qualities of a spoke.

"Spokes failing from crossgrain generally break in two pieces. Defects, such as knots, have greater weakening effect when near the center than when near the ends. . . . . The lower resilience factor in the spokes with defects near the center is noticeable.

"The spoke tests definitely show three

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things: (1)That the present system of grading buggy spokes does not correspond to their strength and toughness; (2) that the factor denoting the strength and toughness of clear spokes varies directly with the weight, and (3) that red, white, or mixed spokes of equal weight have practically the same resilience factor."

Rapid Transit for Tennessee Towns.

That opponents to the introduction of gasolene motor cars on railroads are to be likened to the people who opposed the original introduction of the steam locomotive, was declared by the Wisconsin Railroad Rate Commission in a decision made last week in dismissing the complaint of citizens of Madison and Monroe, Wis. The complaint declared that the motor car installed in service by the Illinois Central between Madison and Freeport is dangerous and inadequate as a means of transportation.

The commission declared that this car, which is being adopted by the Union Pacific, Northwestern and other roads on branch and poorly patronized lines, is a mark of a distinct epoch in railroad transportation and will result in economy for railroads and greater benefit to the traveling public.

The commission recalls that when the English parliament was debating a charter for the first English steam railway, strenuous objections were raised and it was claimed that the smoke of the locomotive would blight vegetation, the railway would depress land values and the health of the people would be destroyed; that even hens would cease to lay eggs and that it would be better for the people to stick to the stage coaches and canal boats. The commission recalls that the health question involved in the first railway in Germany was submitted to a then eminent medical authority, who declared that not only would the travelers be stricken, but the onlookers would get a disease which he named delirium furiosum.

The result of the decision is that railway gasolene motor cars will be encouraged in Wisconsin.

Railroad Board Favors Motor Cars.

Residents of Murfreesboro and Woodbury, Tenn., are organizing a stock company which, when formed, will purchase a 30 horsepower automobile with a seating capacity of twelve, and run a rapid transit line between these cities. The car will make two trips a day, and if the venture proves profitable, additional cars will be installed.

Stage Line for Atlanta Suburbs.

The Motor Omnibus Co., with $40,000 capital, has been formed in Atlanta, Ga., for the purpose of conducting a stage line between Atlanta, Roswell, Dehlenega and Gainesville. Herbert R. Brown of Macon, and Judge S. S. Yoder, of Washington, are named in the papers.

WILL IT BE T-A-X-A- OR T-A-X-I-?

Both Forms in Use and the Question Up to Dictionary Makers—Popular Preference May Decide.

"T-a-x-a- or T-a-x-i-?"

This question has already started the makers of dictionaries, as well as the people who use this fare measuring device, thinking. One of the cab companies, the New York Transportation Co., holds to the former spelling, the other, the Taxicab Co., uses the "i."

The dictionary folk have their own opinion as to how they would have made the word if they had been called in at the start, but are not so certain what form the public will decide on, and which will receive the final authority of the printed dictionaries when the new word is inserted, as it is sure to be as soon as publishers begin to revise editions.

Dr. Charles P. G. Scott, etymological editor of the Century Magazine, when asked for his opinion as to the two forms, "taxameter" and "taximeter," said:

"While it is impossible to decide absolutely what the dictionaries will do in the matter, one thing is certain, that etymological analogy favors 'taximeter' rather than 'taxameter.' At best, both of these words are etymologically inexact. They are made up of the root of 'tax,' which comes from the Latin, and of 'meter,' which comes from the Greek. Some persons evidently consider that they are using the English noun 'tax,' or the French noun, 'taxe.' The Latin analogy of words of this kind requires 'i' as the connective vowel. If the Greek analogy were to be followed 'o' would be used, as in "thermometer,' and the business form, 'gasometer.' Those who have written the word 'taxameter' have, apparently, followed the analogy of 'hexameter, 'pentameter,' and the like; but these words are really irrelevant and the 'a' there has a different origin. Or they have assumed that the word is formed from a modern Latin noun, 'taxa,' answering to the French 'taxe' or Italian 'tassa,' from the Latin verb 'taxare,' and have, therefore, considered that the proper connective is 'a'; but, etymologically, there is no question that 'taximeter' is more correct.

"But words often get into the dictionary for other reasons than etymological exactness. One of these reasons is popular acceptance; and popular acceptance is governed by a number of accidents.

"In the case of the cab devices in question. newspapers and magazines might spell it 'taxameter,' and this spelling might be generally adopted. If it happened that the company which introduced the device in New York ran the largest number of cabs with a 'taxameter' upon them, the largest number of people would become familiar with this spelling, and it would, by rule of majority, gain precedence. In this case, although the dictionary men might not like it, they would put it down as the first spelling, and add, 'Also spelled "taximeter,"' with a note stating that this is the more correct form, etymologically.

"Then, again, the rule of priority might have to be considered. In botanical and zoological terms it is agreed that the spelling used by the first describer of the thing named shall, unless it be entirely ridiculous, be accepted in order to avoid scientific confusion and useless discussion. If the first maker of such a device spelled it with an 'a' (taxameter), this would have to be taken into consideration by the dictionary men.

"The question of legal adoption might have to be considered. If, for example, the board of aldermen should pass an ordinance in which the spelling 'taxameter' appeared, that spelling might prevail. The proceedings of aldermen always excite profound attention. The spelling in the papers of the original patent also would have an influence.

"The spelling 'taxameter' has one thing in its favor. It is stronger in sound than 'taximeter,' which has a weak stressed vowel in it.

"The pronunciation of the word also must be settled. Shall the stress be a single one, on the second syllable, or shall there be a double stress, one on the first syllable and another on the third? The conventional rule would require the single accent on the second syllable, but it is a good custom in English, in four syllable words, to use two stresses, which make the word easier to pronounce and easier to hear. Moreover, there is a tendency in compound words of this sort, where there are two elements each of which carries a distinct meaning, to separate them by stress, almost as if they were two distinct words. We speak of a kil-o-meter, rather than a kil-om-eter, although the rule requires kil-om-eter, like therm-om-eter, etc. It is possible, therefore, that tax-a-meter or tax-i-meter will become the established pronounciation rather than tax-am-eter."

At the office of the New York Transportation Co., R. W. Meade, the president, said:

"We use the spelling 'taxameter' for historical reasons largely, and because the patent papers on the device in Germany and the United States have this spelling for the Kosmos device which we employ. It, therefore, has a legal recognition and I am informed by editors of dictionaries that legal use of a word sometimes determines its acceptance, apart from questions as to its form. Moreover, this device received its first great development with German inventors who first employed a combination of 'tax' and 'meter' to designate. And the maker of the first German device spoke of it as a taxameter. We have, therefore, simply used the legal name of the mechanism we employ."

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The Week's Patents.

876,164. Automatic Controller for the Speed of Autovehicles. Thomas B. Ford, New York, N. Y. Filed March 28, 1906. Serial No. 308,487.

1. An automatic controller for the speed of auto vehicles comprising the motor, the traction wheels, and a shifting device having a pneumatic actuator controlled by the combined action of the motor, running at a uniform rate of speed, and the driven traction wheels running at a verying rate oi speed.

876,355. Transmission Gear. William S. Hovey, Three Rivers, Mich., assignor to Sheffield Car Company, Three Rivers, Mich. Filed April 29, 1907. Serial No. 370,848.

1. The combination of a driving shaft; a gear revolubly mounted thereon; a bevel gear secured thereto; a clutch for securing said gear to said driving shaft; a transmission shaft arranged parallel with said driving shaft; a gear revolubly mounted thereon arranged to mesh with said gear on said driving shaft; a clutch mechanism for securing said gear to said transmission shaft; connections for said clutches whereby, when one is in engagement, the other is released; driving connections for said driving and transmission shafts adapted to be connected or disconnected as desired; a driven shaft arranged transversely of said driving shaft, and driving connections to said bevel gear for the purpose specified.

876,406. Motor Vehicle. James C. Simonson, Rockford, Ill. Filed March 13, 1907. Serial No. 362,213.

1. In a motor vehicle the combination of the platform thereof, a truck supporting one end of the platform and connected thereto about midway of its length, supporting wheels connected to one end of the truck, an axle pivotally connected to the other end of the truck on a horizontal pivot, and supporting wheels connected to the pivoted axle.

876,460. Starting Mechanism for Internal Combustion Engines. Howard A. Johnston, Toronto, Ontario, Canada. Filed Feb. 11, 1907. Serial No. 356,739.

1. In an internal combustion motor the combination of a storage air tank; a second tank; a pipe connecting the two; a stop cock in said pipe; a pipe connecting the second tank with the cylinder of the engine; a pressure limiting valve in said pipe; and a stop cock between the pressure limiting valve and the second tank, substantially as described.

876,475. Emergency Brake for Motor Vehicles. Alexander D. Morgan, West Roxbury, Mass. Filed Feb. 1, 1907. Serial No. 355,226.

1. The combination with a vehicle, of an emergency brake comprising a frame pivotally attached to said vehicle, a drag pivotally attached to said frame by a substantially vertically arranged pin and maintained substantially parallel to the rear axle of said vehicle, and means under the control of the driver for lowering said frame whereby said drag is brought into contact with the roadway over which said vehicle is traveling.

876,501. Differential Gear. Peter Steinhauer, St. Louis, Mo. Filed July 15, 1907. Serial No. 383,823.

1. A differential gear for vehicles comprising a shaft, wheels loosely mounted at the opposite ends thereof, a rotatable member encompassing the shaft between the wheels, an inner toothed gear carried by each wheel, a gear wheel secured to the shaft adjacent to each wheel, a series of pinions rotatable about their axes carried by the rotatable member adjacent to one of the wheels and meshing with the gear wheel on the shaft and with the gear on the wheel, a series of pinions rotatable about their axes carried by the rotatable member adjacent to the opposite wheel and meshing with the gear wheel, a second series of rotating pinions likewise carried by the rotatable member adjacent to said opposite wheel, said second series being disposed to one side of the first series and along radial lines concentric with the radial lines of disposition of the first series but at different distance from the common center of said radial lines, said second series meshing with the first series of pinions and with the adjacent gear wheel secured to the shaft, substantially as set forth.

876,582. Inlet Valve Mechanism for Explosion Engines. William Ottaway, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed March 7, 1906 Serial No. 304,725.

1. In an explosive engine, the combination with the cylinder thereof provided with a valve opening and with an annular casing seat surrounding said opening, of a valve casing or shell having at its inner end an annular bearing surface fitting said casing seat, and an opening at its outer end, and clamping means embracing a clamping member which is connected with the cylinder inside of the said casing, and a nut having screw threaded engagement with said clamping member and which bears against the outer end of the said shell or casing to clamp the same against said casing seat.

876,645. Spring Cushioned Tire. Isaac Hodgson, Minneapolis, Minn., assignor to The Automatic Wheel & Rim Co., Minneapolis, Minn., a Corporation of New Jersey. Filed March 16, 1906. Serial No. 306,366.

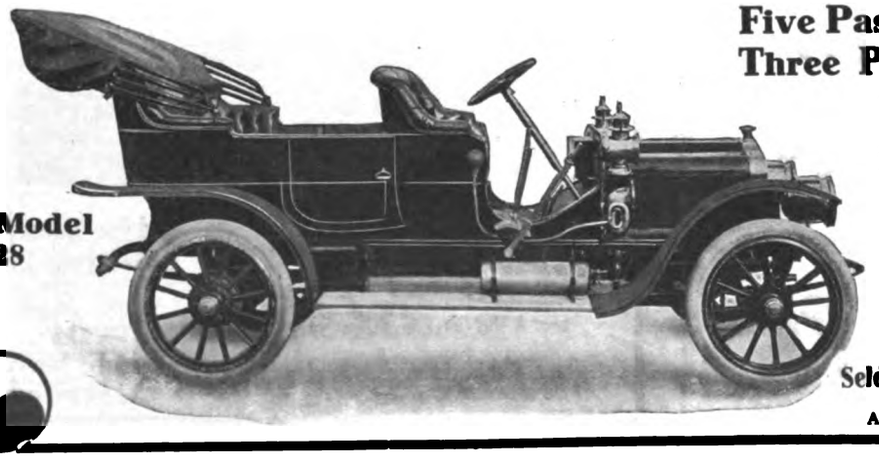
1. The combination with a wheel rim, of armor plates applied thereto and extending circumferentially outward thereof, a yielding tension band made up of a multiplicity of pliable folds working between and having frictional engagement with the inner surfaces of both of said armor plates, radially disposed circumferentially spaced coiled springs interposed between said rim and said tension band, and tread devices applied to the exterior of said yielding tension band, substantially as described.

876,768. Extension Top or Canopy for Vehicles. Albert L. Bowen, Worcester, Mass., assignor to Charles K. Pevey, Worcester, Mass. Filed June 20, 1907. Serial No. 379,962.

1. A canopy frame for vehicles comprising a rear section and a front extensible section, each having an upright bow, a pair of short bows pivotally mounted on said upright bows and having their upper horizontal portions hinged together, and flexible connections between the short bow pivoted to the rear upright bow and said rear upright bow for the purpose specified.

876,769. Motor for Automobiles. Ralph

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R. Brown, Livermore, Cal. Filed May 6, 1907. Serial No. 372,023.

1. In a device of the class described, a shaft or axle, a turbine mounted thereon and having radial blades, a casing inclosing the turbine and having oppositely disposed valve chests communicating with the interior of the casing through oppositely extending ports, a duct connecting the valve chests, slide valves mounted for reciprocation in the chests and governing the passage of steam through the ports, said valves being provided with stems extending through the ends of the chests, suitably guided flexible elements connected with the valve stems to effect movement of the valves in opposite directions, and means for supplying motive fluid to one of the valve chests.

876,800. Carburetter. Emil Gundelach, New York, N. Y., assignor of one-half to Robert J. Ehlers, New York, N. Y. Filed June 18, 1906. Serial No. 322,285.

1. A carburetter comprising a casing composed of a central, a top and a bottom section, said top section being rotatable upon the central section and provided with outlets for communicating with the working chamber of the engine, said central section being provided with a mixing chamber whose walls are spaced apart from the wall of the section, and with an oil reservoir provided with a supply pipe below the mixing chamber, and a central inlet from the bottom section to the mixing chamber, a spraying device within the inlet, said device comprising a pipe extending through the bottom section and communicating with the reservoir, the outer end of said pipe being screw threaded, a nut engaging said end for retaining the bottom section in place, and a tube within the pipe and provided with a nozzle, said nozzle co-acting with the open end of the pipe to form a contracted opening through which the liquid is sprayed, said tube having openings in the sides thereof and provided with a valve at its outer end, a float valve controlling the supply pipe of the reservoir, said bottom section being provided with an air inlet, a valve controlling the inlet, said valve having a stem projecting through the opposite side of the bottom section from the air inlet, a spring normally seating the valve, means for regulating the tension of the spring, and a fan for forcing air through the inlet.

876,826. Wheel Tire. Thomas J. McCarthy, Los Angeles, Cal. Filed Aug. 24, 1906. Serial No. 331,915.

1. The combination with a wheel and a separate tire, of radial springs pivotally anchored at both ends therebetween, and similarly anchored quasi tangential springs alternately running in opposite directions at each side of the radial springs and crossing one another longitudinally of the tire and wheel rim.

876,847. Friction Transmission Gear. George T. Stamm, Los Angeles, Cal. Filed March 18, 1907. Serial No. 363,119.

1. In a motor vehicle, in combination with the side frame members of the vehicle, intermediate friction wheels carried by the side frame members, a driving shaft, a driving friction disc carried by the driving shaft, a driven shaft, a driven friction wheel on the driven shaft, and means for moving the driving friction disc against the intermediate friction wheels and simultaneously bending the side frame members of the vehicle to move the intermediate friction wheels against the driven friction wheel.

876,878. Explosive Engine. William H. Hooper and Fred S. Hutchins, San Francisco, Cal. Filed Dec. 19, 1905. Serial No. 292,427.

1. In a gas engine, an engine frame or structure comprising a crank case, a separately formed slide valve chamber secured to the crank case, and a cylinder secured to the slide valve chamber; said three parts being in longitudinal alignment, with said valve chamber in the intermediate position.

876,905. Carriage Top. William J. Hoskyns, Detroit, Mich., assignor to The Auto Accessories Manufacturing Company, Detroit, Mich. Filed Aug. 10, 1907. Serial No. 387,966.

1. In a carriage top, in combination with a standard bow adapted to be attached to the seat of a carriage, a folding bow provided with a bent cross bar adapted to engage within the arch of the standard and support the flap of the cover when the folding bow and the standard bow are closed together, an attachment to which said folding bow may be connected at the bottom of said standard bow, and an attachment to which said bow may be connected near the spring of the arch of said standard bow, substantially as deseribed.

876,937. Power Transmitting Mechanism. Alexander T. Brown, Syracuse, N. Y., assignor to Brown-Lipe Gear Company, Syracuse, N. Y. Filed Sept. 6, 1904. Serial No. 223,371.

1. In a vehicle, a pair of axle sections, a driving gear secured to each of said sections, a shaft passing across the faces of said gears and inclining with respect to the planes thereof, pinions loosely carried on said shaft, each of said pinions having an extension with a gear, and planet gears carried by said shaft and meshing with the said extension gears, the said pinions being on opposite sides of the axle sections, and each meshing with one of the driving gears.

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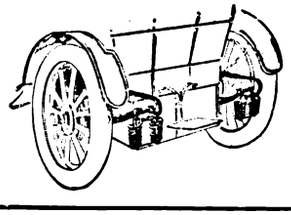


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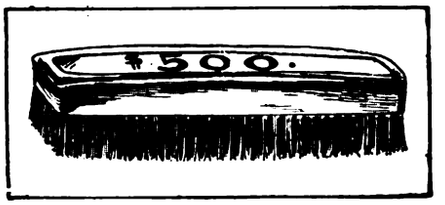
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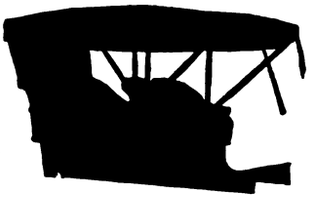
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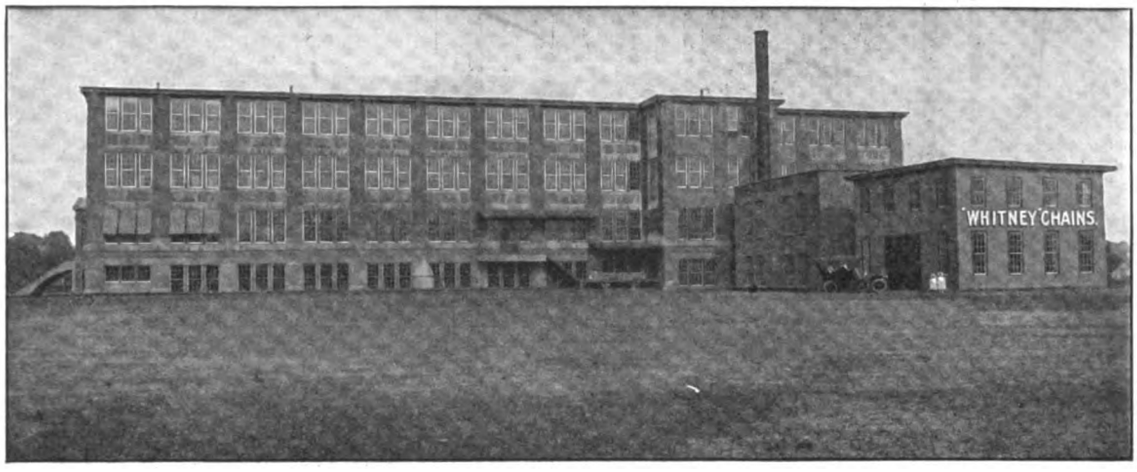
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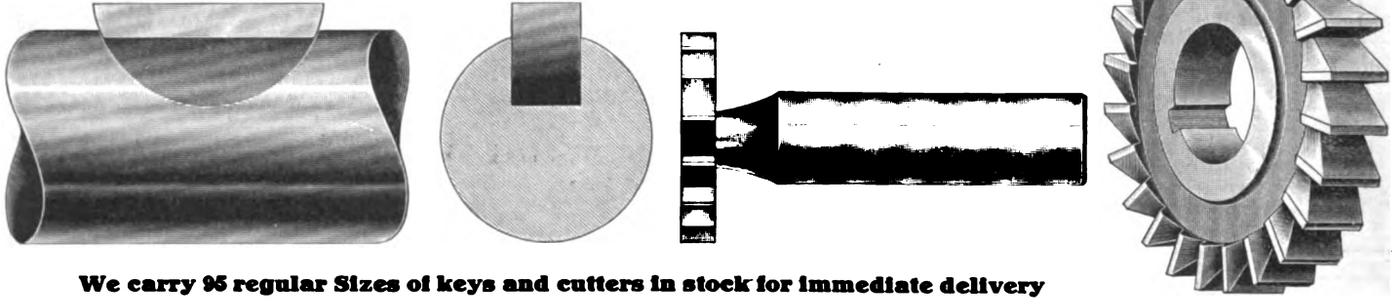
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CONTINENTALS—The Great Racing Tires—Again Victorious.

At the Ormond (Florida) Meet, event after event was captured by automobiles with Continental Tires. The great race for the Minneapolis International World's Championship Trophy was won on these tires.

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300 miles were covered in 233 minutes and 44 seconds—77 miles an hour. All world's records from 100 miles upwards broken.

In this long distance, the winning car had no tire troubles whatever, and the tires were cool at the finish.

Ormond demonstrated anew the advantages of Continental Ready-Flated equipment. This consists of tires carried already inflated on Continental Demountable Rims. In case of a puncture, a new tire can be substituted immediately for the one that is damaged.

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The fact that Continentals are "the fastest tires in the world" is one reason why Continental Tire production is greater than that of any other concern.

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NEVER, until this year of 1908, has there been a speed indicator sold at one absolutely fixed list price. Manufacturers have "named" a list price and some even required the dealers to sell at "that" price.

Only one "insisted" upon it being observed. That was ourselves. But, unfortunately, we sold to the jobber also — and the jobber cut the price.

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So we've cut the jobber's quotations out. If he gets Warner Auto-Meters he pays for them the exact figure the dealer pays. If he cuts, he gets no more Auto-Meters.

THIS STAND IS POSITIVE.

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Automobile Springs Made Especially to Meet Automobile Requirements

VANADIUM ANTI-FATIGUE AND SPECIAL ANALYSIS STEEL



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We offer a solution of the spring problem
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SPARK PLUGS

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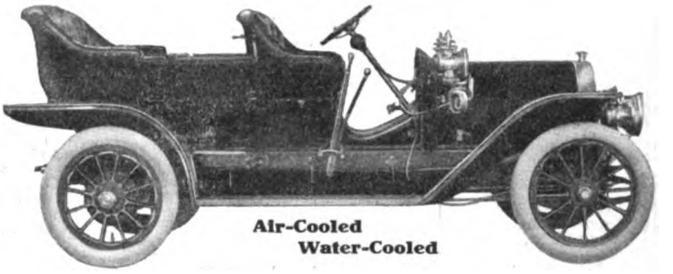
¶ No, you don't!

¶ Until you have ridden in a Marmon, you simply do not know what ease of motion in an automobile is!

¶ Until you have investigated the Marmon, you do not know how much this car has contributed to the final perfection of the automobile.

¶ Send for a catalog. Read up on the many exclusive Marmon features. Take a ride in the car itself. Test it on a bad hill, or on a particularly rough road.

¶ Then, and not till then, will you buy an automobile wisely.



Air-Cooled
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Model H, Touring Car, 40-45 H. P., $3500
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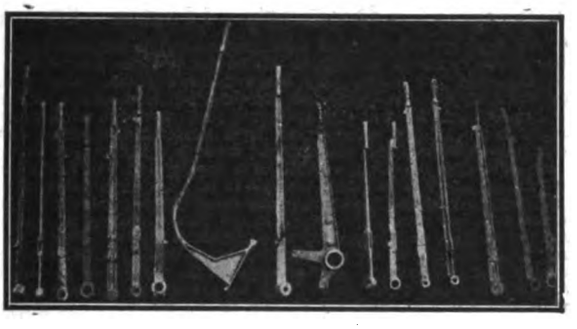
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Nordyke & Marmon Co., (Estab. 1851) Indianapolis, Ind.

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Baltimore Md., Snodeal Automobile Co., 2552 Madison Ave.
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Milwaukee, Wis., John Ure, Jr., & Co., 172 12th St.
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Desirable Territory for Dealers. **Note List Above**

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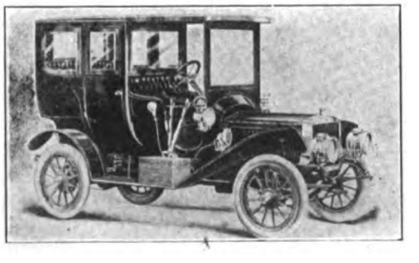
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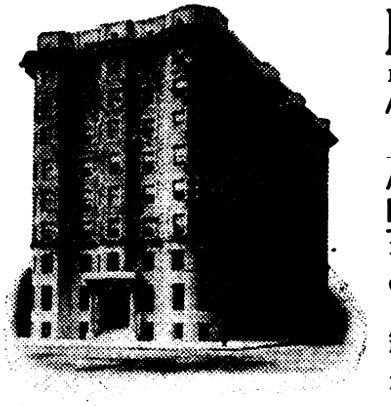


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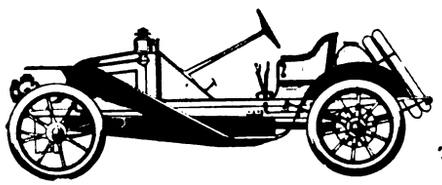
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The "Skimabout" is the most graceful little car on the market, bar none. It has all the lines of a foreign car, fair power, good speed, superb finish and style, and the best materials and workmanship that money can buy.

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It is not an experiment. In no particular or part or feature is it a trial. The Garford is already proved.

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DON'T GET BUMPED

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Others are Imitators

THE HARROUN BUMPER PATENT has been allowed, and as soon as it can be issued we will bring suit against all USERS of Bumpers infringing on and not manufactured under the HARROUN license.

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The Perfection Grease Company, South Bend, Ind.

ALUMALOYD SHEETS

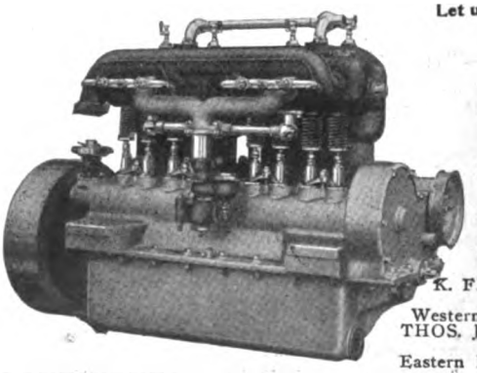
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THREE SIZES

4¼ in. x 4½ in.
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4-cylinder with self-contained oiling system.

Motors are ready for coupling any standard magneto.

Our new factory and machinery enable us to guarantee quality and deliveries. Also clutches and transmissions. Send for catalogue.

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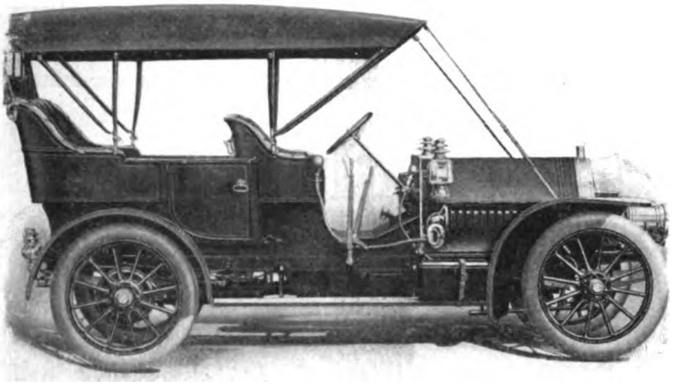
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THE "NON-SKIDDING" CAR



Compare following specifications with other cars at $3,000.

36-inch Wheels. 36x4-inch Diamond, Hartford, Michelin, or Goodyear Tires. 120-inch Wheel Base. 2 Independent Ignition systems—Bosch Magneto, Connecticut Coil and Storage Battery. 40-45 H. P. 4-cylinder engine. Timken axles. Hedgeland Equalizer or Non-Skidding Device. Seven Passenger Body.

Write for catalogue. Good proposition for dealers.

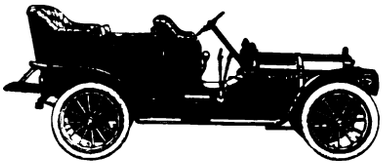
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are a combination of all that has proven best in Modern Motor Car Construction. They are built of the best material money will buy.



Model K—4-cyl., 4⅞x5 $3500

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INDIANAPOLIS, - IND.

THE INCOMPARABLE WHITE

THE CAR FOR SERVICE



All Roads Look Alike To The White

The White, owing to the advantages inherent in its unique system of generating and utilizing steam as a motive power, will take you anywhere at any time—it is a touring car in the fullest sense of the term. If you own a White, you need not wait until favorable weather and the County Supervisors make the roads hard and smooth, nor need you confine your touring to the main highways. All the wild and beautiful spots of nature are accessible to the driver of a White, regardless of road conditions. Buy a White and see the country as you have never seen it before and as you cannot see it in any other way.

One other point of interest, the White, because of the simplicity of its mechanism, is particularly adapted for the man who wishes to drive, and to take care of his own car.

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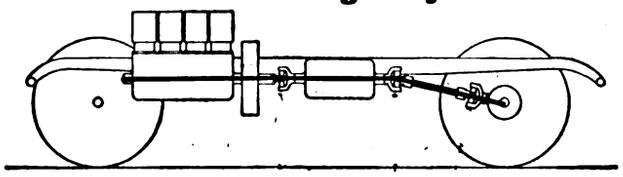
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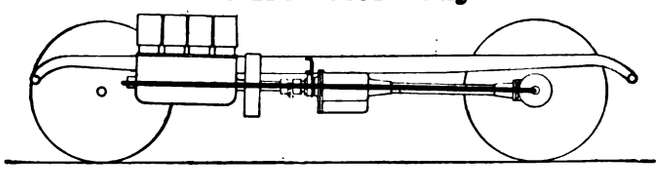
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The Wrong Way



Note Deflection at Universal Joint

The Rambler Way



No Power Lost in Transmission

Rambler Straight Line Drive

Of the new ideas in automobile construction none are of greater value than the straight line drive system as applied to the 1908 Ramblers.

It is well known that no matter how good or carefully made the universal joint, there is an inevitable loss of power and great wear due to deviation from a straight line in the power transmitting system and the loss increases with the square of deflection.

With the Rambler straight line drive there is no deflection, hence no loss and the full power of the motor is delivered to the driving axle.

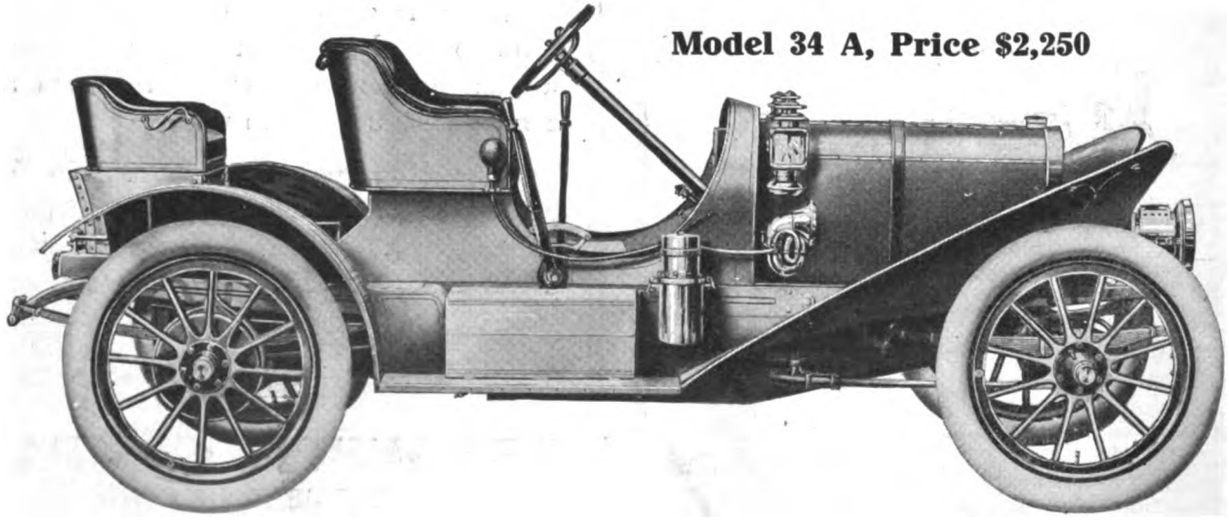
This is but one of many valuable features; our catalog tells of others of equal value; write for it today.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wisconsin

Branches and Distributing Agencies:
Chicago, Milwaukee, Boston, Philadelphia, San Francisco. Representatives in all leading cities.

Model 34 A, Price $2,250



This four cylinder chassis, equipped both as a 3-passenger roadster and 5-passenger touring car. Price of each style $2,250. The Rambler Utility Car with double opposed motor, $1,400.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, March 19, 1908. No. 25

POPE'S ENEMIES INVADE INDIANA

Seek to Have Him Removed as Receiver in that State—Court Confirms His Sale of Two Factories.

The men who are seeking to make trouble for Albert L. Pope, as receiver for the Pope Motor Car Co., who heretofore have confined their activities to the State of Ohio, wherein the Pope-Toledo plant is located, have carried the war into Indiana, which contains the Pope-Waverly factory. They have caused to be filed in the latter State a petition praying for the removal of Pope and of the co-receiver George A. Yule, which is similar to the petition filed in Ohio. The court has set no date for a hearing. While these proceedings, as the Motor World previously stated, include Yule, they really are aimed only at Pope. The receivers themselves are working in perfect harmony and it does not seem probable that their tenure of office will be disturbed.

Meanwhile, the United States Circuit Court in New Jersey, in which State the company is incorporated, has approved the sale by the receivers of the Pope Mfg. Co. of the Imperial plant at Chicago for $100,000, and of the Rambler plant for $125,000. When the receivers requested the order of the court confirming the sale of the Rambler factory to Thomas B. Jeffrey, of Kenosha, Wis., the National Casket Co., which previously had been negotiating for its purchase, unexpectedly raised its bid to $124,000. Mr. Jeffrey, who previously had offered $110,000 for the property, was communicated with and increased his figures to $125,000, at which figure it finally was sold to him.

Shoemaker in More Hot Water.

C. C. Shoemaker, the head and front of the much troubled Shoemaker Automobile Co., Elkhart, Ind., now has some troubles all his own, and must have cause for reflection on the difference between the chicken and the automobile industries. The property of the company was attached while it was being removed from Freeport, Ill., to Elkhart, where after its release a receiver took charge and where early this month the company was declared bankrupt. Last week, following the filing in Illinois of a petition in involuntary bankruptcy against Shoemaker personally, Thomas H. Hollister was appointed receiver. The petitioning creditors are the C. H. Fuller Advertising Agency of Chicago, whose claim is $15,000, and C. H. Cooper of Kansas City, Mo., and M. L. Feckler of Elkhart, Ind. Cooper and Feckler both allege that Shoemaker induced them to part with $5,000 each in exchange for stock in his automobile company which he agreed to take off their hands in case they repented of their bargain. Of course, their repentance became very sincere, but they still hold their stock. They allege that Shoemaker, while insolvent, transferred real estate and property to his brother and other persons, that he has concealed other assets and has absented himself from his usual place of business. Previous to his entry into the automobile trade, Shoemaker had a prosperous business in incubators, chickens and chicken supplies.

Utah Men with Wonder-Working Boiler.

The Western Motor Co., of Salt Lake City, Utah, has been incorporated under the generous law of Arizona, to manufacture a steam flash boiler which, it is stated, may be attached with equal facility to a freight or passenger car, a street car or an automobile. The officials of the company are: Edmund Wilkes, president; Milton L. Oglesby vice-president and manager; Joseph E. Aglesby, secretary and treasurer.

Settled Their Troubles Out of Court.

The litigation involving patents on tire cases or covers in which the Gilbert Mfg. Co., New Haven, Conn., and the Teel Mfg. Co., Medford, Mass., have been engaged, was last week settled out of court. By the terms of the agreement, the Teel company will discontinue the manufacture of such cases or covers.

TWO FAKERS CONVICTED OF FELONY

Their Promotion of "a Motor that Never Grew Hot" Branded Bunco—Queer Methods Exposed at Trial.

How Benson Bidwell and Charles F. Bidwell of the Bidwell Electric Co.—the concern which is said to have exploited a "cold motor" that would not stay cold, but smoked when demonstrated to a few of the thousands of stockholders who helped swell the receipts of the $2,500,000 corporation, and which motor was going to revolutionize the automobile industry, among many other things, but didn't—were able to get by the city and post office officials with their schemes was made clear before Judge Chetham in Chicago, by Miss Ida C. Palmer, an innocent looking employe. The recipe so successfully used by the exploiters, according to Miss Palmer, was this:

"Fill 'em (the examining officials) with cheap cigars, give 'em a good talk and send 'em on their way rejoicing."

The company's methods thus succinctly summarized were brought out by the questions of Assistant State's Attorney Popham at the trial of the Bidwells, which began on February 17th, and ended on Saturday, 14th inst., the jury deliberating for seven hours and bringing in a verdict of guilty on the charge of operating a confidence game, which is a penitentiary offense. The jury at first reported also a similar verdict on the charge of obtaining money by false pretences, but counsel for the defense objected to the double verdict, and the court directed that the jury find on only one count, which was done after a half hour's further deliberation, finding against both defendants, who are father and son.

Miss Palmer's testimony was elicited through the desire of the prosecution to ascertain if the company had not been investigated by the authorities. She

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was the star witness for the prosecution, and told how, when one of Mayor Dunne's inspectors came around, one of the Bidwells gave him some cigars, then told him what a fine motor it was, what a legitimate business he had and how much the dividends were going to amount to. After telling the inspector this, declared Miss Palmer, Bidwell took him to the door, gave him some more cigars, patted him on the back, escorted him to the outer door, gave him another cigar and asked him to call again. When Bidwell came back, according to Miss Palmer's testimony, he said:

"That's just the way I pulled the wool over the post office inspector's eyes. Give 'em cheap cigars and talk to 'em. That's the way I get along with these fellows."

"Give 'em a good story, Ida," was a piece of advice given her, she said.

Miss Palmer said it was her duty to go through the shop, pointing out motors of the ordinary patterns and describing them as cold motors. The one operating motor was run for five minutes at a time, for to run it longer would melt the snow and ice which had "congealed" on it with the assistance of a man and a bucket. The witness further stated that she had sold considerable stock and that one time when she suggested that they needed an expert bookkeeper to straighten out the books of the company it was Charles Bidwell who said to her:

"An expert bookkeeper is just what we don't want. We have girl bookkeepers because they don't know anything. A man would find out right away what was going on."

The witness stated that the "last grand scheme" of the Bidwells was to get her to write to dissatisfied stockholders and tell them that she would buy back their stock at 25 or 35 per cent. of the original cost if they wanted to get rid of it. She received mail in this connection addressed to "Victoria C. Freeman, general delivery." The idea she said, was to sell this stock over again to new buyers at 75 per cent. on the hundred. She also stated that the Bidwells had promised her $2,000, but that she only received $130 in instalments, which may explain her willingness to aid in the prosecution of the promoters.

Charles J. Moberg, who said that he worked for the Bidwells 449 days, was another witness called.

"Charles Bidwell sometimes brought people in after the motor was frosted," said Moberg. "Then he would say, 'Give us light,' and I would turn on 250 electric lights that were run by the motor. These were kept going five or ten minutes, but only when people were in there to see it. I never saw it working any other machine or supplying power."

O. C. Wilson, an advertising agent, said he placed $85,000 worth of advertising in papers, which the Bidwells authorized and paid out of the funds of the company.

The Week's Incorporations.

Manistee, Mich.—American Garage and Motor Co., under Michigan laws, with $5,000 capital. Corporators not named.

St. Louis, Mo.—Spring Motor Fan Co., under Missouri laws, with $50,000 capital. Corporators—Herman O. Engelke, Edgar E. Engelke and Edward H. Rose.

Galion, Ohio.—Fetzer Automobile Mfg. Co., under Ohio laws, with $100,000 capital. Corporators—James F. Shumaker, Allen H. Fetzer and James O. Sloan.

Kittery, Me.—Taylor-Palmer Garage Co., under Maine laws, with $150,000 capital stock, of which nothing is paid in. Corporators—O. Sumner Paul, president, and Albert H. Peavey, treasurer, Kittery, Me.

New York City, N. Y.—General Tire Repair Co., under New York laws, with $2,000 capital. Corporators—Charles W. Rehermann and John F. Rehermann, 220 West Forty-eighth street, New York City, N. Y.

Jersey City, N. J.—Federal Taxicab Co., The, under New Jersey laws, with $200,000 capital; to manufacture motors, engines, machines and vehicles. Corporators—E. McM. Mills, R. F. Tully, C. A. Cole, Jersey City, N. J.

Paterson, N. J.—Taximeter Auto Co., under New Jersey laws, with $125,000 capital; to manufacture motors, engines, cars, boats, etc. Corporators—W. F. Harding, Haledon, N. J.; A. A. Fischer, J. F. Blauvelt, Paterson, N. J.

New York City, N. Y.—Harvard Automobile and Garage Co., under New York laws, with $10,000 capital. Corporators—Alois Habisreitinger, 1696 Week avenue; Benjamin B. Dolero, 110 West Ninety-fifth street, New York City, N. Y.

New York City, N. Y.—Progress Motor Vehicle Co., under New York laws, with $50,000 capital; to deal in, maintain and operate motor vehicles, etc. Corporators—F. J. Hogan, M. Schlesinger, L. Divizic, New York City, N. Y.

New York City, N. Y.—Union Taxicab Auto Service Co., under New York laws, with $150,000 capital; to manufacture, deal in and hire out automobiles, etc. Corporators—W. J. Duane, F. A. Phillips, C. C. Bailey, New York City, N. Y.

New York City, N. Y.—Knickerbocker Taximeter Cab Company, under New York laws, with $15,000 capital. Corporators—William B. Hurlburt and Sanford J. Wise, 1540 Broadway, and Stewart H. Eliott, 1183 Broadway, New York City, N. Y.

New York City, N. Y.—S. & S. Variable Speed Gear Co., under New York laws, with $20,000 capital. Corporators—Bartlett G. Yung, 34 Gramercy Park; C. D. Francis, 60 Wall street, New York City, N. Y.; Bernard E. Scriven, 1203 Eighth avenue, Brooklyn, N. Y.

San Francisco, Cal.—Taxicab Co., The, under California laws, with $500,000 capital; to operate taxicabs. Corporators—J. W. Reese, Gilbert D. Boast, Joseph D. Kennedy, Clarence E. Sheets, James Moriarty, Charles McDonough and Nathan M. Moran.

Kittery, Me.—Simplex Motor Car Co., under Maine laws, with $50,000 capital stock, of which nothing is paid in, to manufacture, deal in and repair automobiles and motors. Corporators—O. Sumner Paul, president, and Albert H. Peavey, treasurer, Kittery, Me.

New York City, N. Y.—Requa-Coles Co., under New York laws, with $100,000 capital, to deal in automobile devices. Corporators—Leonard F. Requa, 267 West Seventy-ninth street, New York City; David H. Coles, 11 McDonough street, Brooklyn, N. Y.; Philip Van Alstine, Spring Valley, Rockland county, N. Y.

In the Retail World.

The Maxwell-Briscoe Automobile Co., has taken possession of its new garage at 1616-18 Grand avenue, Kansas City, Mo.; its proportions are 50 by 100 feet.

George F. Dyer has sold his automobile business at Manchester, Mass., and will remove to the South. Ill health in his family is his reason for relinquishing the business.

Wyatt & Listner is the style of a new firm which has commenced business at 1773 Broadway, New York. They have the agency for the Empire State Tire Co., of Buffalo.

S. L. Hoagland of Almond, Wis., has moved his garage equipment to Waupaca, in the same State. He has rented the first floor of the Peterson building for garage purposes.

The Seattle (Wash.) Automobile Co. has filed the necessary legal notice of its intention to increase its capital stock to $100,000. A meeting of the stockholders will be held for the purpose on April 27th.

Manitowoc, Wis., has been for some time in need of a garage and now is to have one of an up to date character. It will be opened by Hall Bros., of that city, who have secured agencies for half a dozen leading automobiles and will cover the city and surrounding territory.

The Jordan Automobile Co., Minneapolis, Minn., which went into the hands of a receiver in November last, resumed business last week at its old stand, 217 Fourth street, with the Franklin agency as its exclusive account. It is stated that the company paid every creditor in full.

Rockford, Ill., is to have a new garage at 122 North First street, where Fred Miller purposes erecting a two-story brick building, 140 by 120 feet in dimensions. Troller & Co., a corporation formed by Ed Troller and Miller, will occupy the first floor as a garage, where they will handle Oldsmobiles and Wintons, Goodrich tires and a full line of accessories. They are located now in South Water street.

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MIXING POETRY AND MOTOR CARS

Kansas City Genius Shows How It Can be Done—His Rainbow Hued Inducements to Customers.

There are two Kansas Cities, but only one Allen Dorman, who lives within the confines of one of them—the one located in Missouri. He is the "owner and manager" of the "K. C. Auto Brokerage Co.," and is "Kansas City's Automobile Leader"—his letter head says so. But according to this same bit of stationery he does more than lead with such prosaic things as automobiles, for there is evidence that he is able to mix poetry and brokerage in large doses. The letter head, which, incidentally, bears in one corner a portrait of Allen Dorman, as he is to-day, and in the other corner a picture of the same but much leaner Dorman, as he looked 20 years ago, proclaims also that he is the "author of Allen Dorman's poems; 524 pages; silk finish; illustrated"; a few of them are enumerated, among them. "Diamonds Among the Lillies," and "Satan with his Tail Screwed to a Bench."

The letter head also makes known that Dorman is "promoting the Kansas City Electric Plow Co., capital stock $1,000,000." He has issued a circular letter addressed "To My Customers," which shows how an inspired genius "does things" when he engages in the automobile business, and is not occupied with the task of poetically screwing Satan's tail to a bench. The letter is worth a niche in the hall of fame. Read it:

"To my Customers:

"Many thanks for my write-ups, most all over the United States, from Maine to California. I wish to show gratitude for my write-ups in the sale of automobiles whenever I can. Science is on the move. Civilization saw the wild horse of the plains harnessed to till the soil. The wind mill and storage battery may draw on the mad force of the storm to run your auto or plow the land. The tempest may be harnessed to man's use. Do not purchase an auto that soon may become obsolete. Purchase of me; I will fix you right. I am in a position to deal direct with the manufacturer. I also do a general agency business. An up town office for any dealer or manufacturer. I can sell you a fine outo cheap. I know of bargains for somebody. Please call and consult me before you purchase. State the kind and size you wish. I wish to secure 1,000 names and addresses of those who wish to purchase autos in 30, 60 and 90 days, so I can arrange to order a car load each week. You pay half down when I order, less 30 days club rates. The good work has already started. Send me your name and address, plainly written. Freight from $9 to $99 per auto. Two or more autos are a car load. Second hand machines sold or exchanged. City trade earnestly solicited. Editors when in the city should ask my friends for a ride. Please send names. State your nearest railroad station. Goods shipped direct from factory. State what you wish. Do your people need rain?"

The poetic genius of Dorman is reflected in his correspondence. In one of his letters addressed, not to an individual, but to a big automobile company, requesting a catalogue, signed "Your friend," and marked "Personal," he says: "I secured orders for $25,000 of autos last Tuesday when I was so tired I could not lay on the bed."

First Show in the South.

Every automobile dealer in Memphis, Tenn., attended a meeting of the Automobile Dealers' Association of that city last week, at which it was decided to hold an automobile show in the Auditorium on April 16, 17, and 18. There was much enthusiasm over the project, which, according to President Jerome P. Parker, will be the first automobile show given in any of the southern States. The dealers say they will spare no expense to make the affair a success, and the work of preparation has been placed in the hands of competent committees.

American Locomotive Making Taxicabs.

The American Locomotive Co. has entered the taxicab field, through its subsidiary automobile company, an initial contract for 100 taxicabs being now in course of production at the plant of the American Locomotive Automobile Co. at Providence, R. I. The order was placed by the William H. Scaich Co., which has the contracts for the cab privileges at the Waldorf-Astoria, the Holland House and the Park Avenue Hotel, in New York.

Trade Association Formed in Michigan.

As a result of the promotion of the trade carnival which begins in Indianapolis on Monday next, the Indianapolis Automobile Trade Association has been formed and will be incorporated. Frank Staley, R. I. Eads and C. S. Hicks were named as a committee to attend to the preliminaries.

Borsch Adopts Explanatory Name.

Robert Bosch, New York, Inc., has changed its title to the more euphonious and explanatory Bosch Magneto Co. The change is of name only; the officials, product and location, 160 West Fifty-sixth street, New York, remain exactly as heretofore.

Toledo Parts Company Fails.

The Toledo Auto Parts Co., Toledo, Ohio, is in the hands of a receiver. Action to that end was taken by Frank J. Cheney, who owns the building occupied by the concern. He alleged that it is insolvent and unable to pay $700 due under the lease.

INTERCHANGEABILITY STANDS TEST

American Cars Dismantled and Reconstructed from Promiscuous Lots of Parts—English Test a Practical Dem

American manufacturing methods, on trial at the hands of the British public and an official committee of the Royal Automobile Club, have won an overwhelming victory in the performance of the three 10 horsepower, Model K, Cadillac cars which have just completed the "standardization test," which has set all England by the ears. Selected by ballot, tried out officially, and then dissected and intermingled in one confused mass, the parts were again assembled, the three "new" cars adjusted to running order, and by way of final demonstration of their running capabilities, were run through a 500 mile endurance run on the Brooklands motordrome. The performance was carried out at the instance of the Anglo-American Motor Co., of London, British agents for the Cadillac product.

The preliminaries to the test took place on February 29, when representatives of the Royal Automobile Club met at the show rooms of the Cadillac agency and selected the three cars out of a group of eight. Characteristic of the thoroughness with which the entire test was carried through, was the method of choice. Four cars were first picked off-hand, and the three were afterward selected from these by ballot. A run out to the Brooklands course, followed by a 25 mile running test on the track followed. In this, one car was so unfortunate as to reverse a spring shackle when crossing a bump in the course, and the occurrence was recorded as an error against it, though admittedly not a serious one.

The complete dismantling of the cars occupied two whole days, only two men being alowed to take pare in the work, and then only under official supervision. The dismantling was carried out to the extent of stripping the chassis down to the dashboards, coils and pedals. During the remainder of the week the parts accumulated from the cars were mixed and reassorted into heaps, from which the rebuilt cars were to be assembled. The final endurance test was planned to occur on Monday, 9th inst. One of the cars was finished in time to participate in the program as arranged. The other two were delayed, their parts being frozen fast in the floor of the barn where they had been stored, owing to an unforeseen rain and sleet storm, which combined to ice up the course and delay the work of car manufacture.

Later, the parts of the remaining cars were thawed out and put into place and the trials completed as planned. According to cable despatches, the three cars ran "wheel to wheel" for the entire distance, covering 500 miles at the rate of 34 miles an hour.

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STUDEBAKER

Each successive endurance event simply serves to demonstrate more forcibly than before the extraordinary endurance of this sturdy car

The Latest Studebaker Achievement

Chicago Inter-Ocean, March 8, 1908

STUDEBAKER ARMY CAR REACHES FORT

Machine Driven From New York by Drivers Huge and Smith Arrives at Leavenworth After Eighteen Days of Travel.

According to telegraphic advices, the thirty horse-power Studebaker car, which made the run from New York, arrived at Fort Leavenworth at 11:32 yesterday morning after having been on the way eighteen days two hours and thirty-two minutes.

Colonel Loughborough accepted the message from General Frederick Dent Grant, after which the tourists were welcomed by General Hall. The car covered the last ten miles in twelve minutes. The car was escorted to Leavenworth by the local automobile club members.

Mayor Peter Everhardy of Leavenworth extended the key of the city to Drivers Huge and Smith at a banquet held last evening. The car left for Kansas City at midnight.

The machine left New York on Tuesday, Feb. 18, and completed one of the most remarkable trips ever accomplished by an automobile. It would have been a hard trip for any car, even under the most favorable conditions, but starting, as it did, on the heels of the worst snowstorm which has visited the central states in the past twenty years, it is marvelous that the distance, nearly 2,000 miles, should be negotiated in a period of only a little over two weeks.

Starting from New York six days after the New York to Paris racers had begun their trip westward, and that after only a few hours' preparation, the little car, following the same route as the transcontinental racers, moved with such regularity upon its way that by the time it reached Chicago it had overhauled and passed every one of the New York to Paris contestants.

It is true that the car was driven night and day by relays of drivers, but the real secret of the splendid time made by the car was due to the fact that practically no time was lost making adjustments or repairs. It was always ready to push on when the driver was ready to take the wheel. Much time of course, was lost upon the fearful roads in northern Indiana. Hours were spent digging through single snowdrifts, and when the aid of horses was finally secured all the power the sturdy little car possessed was utilized to flounder through the snow.

It really does not seem credible that any piece of machinery could be so perfectly constructed as to successfully endure the work the little Studebaker engine was called upon to undergo throughout this trying journey.

When the car reached Chicago, instead of remaining here for several days to be overhauled, as did the New York to Paris contestants, it again started upon its way after only a few hours' delay. It was after dark Tuesday evening before General Grant's message was presented to Brigadier General Carter, commanding the Department of the Lakes, and before daylight the following morning it was on its way to Fort Leavenworth, Kan., via Omaha, Neb., having found it necessary to abandon the shorter route on account of the roads being practically impassable.

From the time of leaving New York until the car reached Leavenworth, the trip was one continuous ovation for the sturdy Studebaker car and its plucky drivers. The drivers and car had many narrow and thrilling escapes on the way. Ner Utica, N. Y., the car and drivers were pitched into the Erie canal, and several times before reaching Chicago the drivers, unable to distinguish the roadbed, ran into a ditch. Out in Iowa Smith had to ditch the car in order to avoid a collision with a runaway horse, and later on ran into a wire fence across the road, which was hidden in a snowdrift. This was the same driver, Milton Smith, who drove from Kendallville, Ind., to Michigan City, staying at the wheel for over forty hours, and then with only an hour's rest, being the only man familiar with the road, climbed on the machine again and rode into Chicago beside the new driver, Jack Huge, making nine hours more on the car, or nearly fifty hours in all.

As one reviews the incidents and hardships of this trip, one cannot but arrive at the conclusion that it was the most severe trial of endurence ever performed by any car, and it should fully demonstrate to the War Department the availability of such a car as the Studebaker for the purpose of carrying army dispatches in time of war

Studebaker Automobile Company

Main Factory, South Bend, Indiana. General Office, Cleveland, Ohio.

BRANCHES:

BOSTON, MASS.—Studebaker Bros. of New York. 1020 Boylston Street.
CHICAGO, ILL.—Studebaker Bros. Mfg. Co. 378-388 Wabash Avenue.
DALLAS, TEXAS—Studebaker Bros. Mfg. Co. 317-319 Elm Street.
DENVER, COLO. Studebaker Bros. Mfg. Co. 1711 Tremont Street.
KANSAS CITY, MO.—Studebaker Bros. Mfg. Co. 13th and Hickory Streets.
NEW YORK CITY—Studebaker Bros. Co. of New York, Broadway and 48th Street.
PHILADELPHIA, PA.—Studebaker Bros. Co. of New York, 330 North Broad Street.
PORTLAND, ORE.—Studebaker Bros. Co. Northwest, 330-336 East Morrison Street.
SAN FRANCISCO, CAL.—Studebaker Bros. Co. of California, Mission and Fremont Streets.
SEATTLE, WASH.—Studebaker Bros. Co. Northwest, 308 First Avenue, S.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, MARCH 19, 1908

Unworthy Action of the A. C. A.

Not many unbiased men will waste much sympathy on or lend much support to the Automobile Club of America in its withdrawal from the American Automobile Association. It is big enough and strong enough, and should be broad enough to be above petty contention and personal grievance. Not one statement that has issued from the little coterie responsible for its action, since the present situation was precipitated, has served to make the club's position the more admirable. Its manner of "wishing the A. A. A. every success," while apparently being the retort courteous was made snakelike by the enclosure that accompanied the "wishes"—an enclosure reciting the withdrawal of another club in an entirely different State and with which the A. C. A. had nothing to do. The coterie's efforts to make it appear that the legislative interests of New York City are separate and apart from those of the rest of the State likewise smacks of insincerity and are farfetched and without merit.

The Motor World scarcely can believe that the action of the directors of the A. C. A., however binding on the organization as a whole, represents the sentiment of the general membership; therefore we refer to "the coterie," which probably is more nearly correct. The action of the club is similar to the action of the small boy who is mad and "won't play, so there now!" It is plain to any one with half an eye that some large man's dignity has been offended, or that his self-conscious worth has been suffered to pass without proper appreciation and that he is "getting even" for the slight.

What the club will gain by holding aloof and flocking by itself and refusing to cooperate, is beyond understanding. It certainly is not a national organization and never can be recognized as such; and it is very many years since it was the "whole thing." It as certainly cannot attempt legislative effort without coming into conflict with the rest of the State and thereby causing chaos and defeating the best interests of automobiling; and as the State law governs the city ordinances, how it can serve even local interests is problematical. The fact of the matter is that the A. C. A. is in no enviable position and is hard pressed for logical explanations or excuses. Its action is unworthy of it; it is a smudge on an otherwise honorable record and each attempted explanation serves to make the smudge worse. Only one defense is possible—that the club needs the money expended for dues; and the club itself has cut away that prop. In the matter of official representation, the A. A. A. always has recognized the club handsomely, and if it were not for the fact that several New York automobile writers are possessed of jealousy or personal grievances of their own—apparently chiefly because one or two of their craft have office or influence in the A. A. A.—it is doubtful if one pen would write even a labored brief for the Automobile Club of America.

The situation, however, adds force to what the Motor World persistently has pointed out to the A. A. A., i. e., that club membership is closely akin to the house built on shifting sand. As in the present case, the withdrawal of any club may be brought about by any strong member with a grievance, or by the very human conclusion, reached sooner or later, that it were better to save large lump sums paid out of a club's treasury. The Buffalo club, now the bulwark of the New York State Association, is just as likely to be ultimately so affected as any other unit of the A. A. A.. Each withdrawal works mischief and spreads far reaching misconception. Many people reach their conclusions from big headlines and when the latter announce "War" or "Disruption," as in the present instance, that is the idea that will most generally prevail. Individual membership is the most lasting foundation. The A. A. A. should be wise in time and be not misled because of present prosperity and because "members in blocks" come easiest.

The Motor and the Buggy.

Because the high wheeled motor buggy is even yet regarded in many quarters a sort of unsophisticated cross between a wagon and a motor car, the fact is not generally appreciated that it presents certain problems of design which are as novel, as they are distinct from those which have influenced the development of the purer type of car. Such is the case, however, and among the builders and owners of these useful vehicles sharp discussions are arising as to the respective merits of this or that system, which are distinctly reminiscent of the early days of the automobile itself—and some of the later days as well.

One of the questions which already is arising for argument, and which promises to be the turning point of heated controversy in the future, relates to the old question of engine position. Primarily, the motor buggy being, in a sense, an assemblage only, of motor, transmission and carriage, the "works" were most conveniently located underneath the body, or within it, according to circumstances. The traditional position is thus the same as with the automobile proper. A newer school, following the reasoning which led to the adoption of the forward position for the engine in that case, has also employed a front mounted engine for the motor buggy. In this connection some of the most advanced and perfect mechanism yet applied to this purpose has been utilized. The respective merits of the two systems would appear to be the same as with the heavier and lower wheeled automobile. The students of the matter hold that such is not the case.

The arguments advanced in favor of the rear mounting of the power plant as against the front, are two-fold. It is claimed, first, that with the forward position of the en-

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gine, the vehicle is inclined to skid unpleasantly because of the concentration of so much dead weight in front, and that even when running on a perfectly straight course, there are times when it tends to "wag its tail," metaphorically speaking, and to an unpleasant degree. Second, it is claimed that because of the great diameter of the driving wheels and the low resiliency of the solid tires, the wheels tend to bound and skip over uneven surfaces, thereby cutting down the traction and rendering the propulsive effort less continuous than when greater adhesion is secured by placing the motor further to the rear. It is admitted, however, that neither of these tendencies is manifest at speeds below fifteen miles an hour.

On the other hand, the advocates of the front mounting for the power plant claim better guidance with more even distribution of weight, a more satisfactory and economical disposition of the organs of transmission, an easier riding vehicle, and altogether a more convenient one in point of luggage capacity and accessibility of mechanism. As yet too little is known of the properties of this type of vehicle to warrant the outsider in taking up a definite position on either side. But it is enlightening to note that such a conflict of opinion exists where none had been suspected. The outcome will be watched with interest.

Federal Aid for Road Improvement.

To the man unversed in constitutional law, it always has seemed that if it were legal to build national highways in the time of our forefathers, it still is legal to do so; it always has seemed that if it is constitutional for Congress to expend money for for the improvement of rivers and harbors, it is legal for it to expend money for the improvement of the common roads.

If the greatest good for the greatest number is one of the aims of government, there is no room for doubt that as between the river and the road, tens of thousands will be served by the road while individuals are served by the river. If the river promotes commerce, the road promotes both commerce and the individual prosperity and personal well being of each citizen. It would seem therefore that Federal aid cannot serve more persons or purposes, or better ones, than by application to the improvement of the roads. It is aid of the sort to which even the most ardent State's rights advocate hardly will object. If it is not constitutional, it should be made constitutional.

These thoughts are suggested by the bill which the National Grange has caused to be introduced into Congress. It would have the Federal Government appropriate $50,000,000 for road improvement. As apportioned over a term of years, the amount is pitifully insufficient, but accepted as an entering wedge and as marking a beginning, it is a big stride in the right direction. The bill should be pressed home. Every organization should place its strength behind it. Led by the Grange, the cry of "special interest" scarcely is likely to be raised. Every effort brought to bear will be, therefore, more likely to achieve result. Men elected to public office appear to have a peculiar regard for the farmer vote and they are therefore likely to give more heed to the Grange's bill, than otherwise would be the case.

The Rising Against Frelinghuysenism.

It took the New Jersey worm a long time to turn, but it appears now to have turned in no uncertain fashion. The fight which is being waged against Frelinghuysenism is positively inspiring. That possibly astute politician apparently considers automobilists "good things" fit only for "plucking" and it is high time that he was shown the error of his estimate. The Newark trade association is pointed in the right direction in seeking to pledge their legislative representatives against Frelinghuysenism, and all it stands for. The average politician is fearful chiefly of organized effort and when organized effort seeks the defeat of a candidate at the polls, it is then that it becomes mighty. The automobilists may not be able to change the result of a State or a city, but they must hold the balance of power in more than one ward or precinct, and that power should be brought to bear.

Let Well Enough Alone!

Why in thunder do not the New York State Automobile Association, the Automobile Club of America, and Albert Shattuck let well enough alone? The New York law has stood the test and stood it well. It requires no tinkering of any sort.

Why should any man or any organization agree to an increase of fees, even for road improvement? It is wrong in theory and wrong in practice. It is special legislation; it is the sort of legislation the organizations should oppose as a matter of right and of principle; and if it means fight, the fight may as well begin in the Empire State. New York State already has voted $50,000,000 for road construction; the automobilists will bear their share of the taxation. It is not fair that they should bear more than their share. It is not proper that their chosen or self-chosen leaders should consent to do so.

If fifty millions are not enough for the work, let more millions be obtained. But let the burden be distributed equitably, which is to say, legally. The cry that automobiles injure the roads is little more than an echo of the cry that bicycles injured the roads, which cry soon was dissipated in thin air. No cycling organization and no politician would dared have advocated a special tax on bicycles, when the cry spent itself. If there are automobilists who desire to contribute to betterment of the roads, it is their privilege to do so. It is not right that contribution in the guise of special taxation be wrung from them by process of doubtful law. It is mischievous process.

COMING EVENTS

March 15-April 1, Omaha, Neb.—Omaha Automobile Dealers' Association's annual show in the Auditorium.

March 18-19, Savannah, Ga.—Savannah Automobile Club's stock chassis race.

March 18-24, New Haven, Conn.—New Haven Automobile Dealers' Association's show in Music Hall.

March 18-25, Rochester, N. Y.—Rochester Automobile Club's show in new Convention hall.

March 23-28, Indianapolis, Ind.—Indianapolis Automobile Dealers' Association's show week.

March 31-April 4, Salt Lake City, Utah—Automobile show in Auditorium skating rink.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association's annual show in Duquesne Garden.

April 6, 7 and 8, Denver, Col.—Annual show in Mammoth skating rink.

April 6-11, New York City—New York Automobile Trade Association's carnival week.

April 16-18, Memphis, Tenn.—Automobile show promoted by the Automobile Dealers' Association of Memphis, in the Auditorium.

April 24, Westchester county, N. Y.—Stock chassis race for Briarcliff trophy.

April 28, Norristown, Pa.—Norristown Automobile Club's endurance run to Lancaster, Reading and return.

May 5-6, Harrisburg, Pa.—Motor Club of Harrisburg's second annual endurance run.

May 16, Hartford, Conn.—Hartford Automobile Club's 200-miles endurance run.

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A. C. A. GETS MAD AND WONT PAY

Withdraws from A. A. A. and Will Flock by Itself—"Too Much Shattuck" the Basis of the Trouble.

The A. A. A. and the A. C. A. are "out." It has been no secret that there long has been friction between the two bodies—the American Automobile Association and the Automobile Club of America—and as only two weeks since it was stated publicly that the big club would break away from the national organization by failing to renew its membership when the year elapsed, official announcement of the fact, which was made late last week, caused no general surprise.

The announcement followed the annual meeting of the New York State Automobile Association at Buffalo on Thursday, at which Oliver A. Quale, of Albany, and Chauncey D. Hakes, of the same place, were re-elected president and secretary, respectively. President Hotchkiss, of the A. A. A., came to New York immediately after the meeting and issued this statement:

"While the differences between New York's local club and the State association proper, which is a body of forty clubs, including one at Buffalo as large as the local club here, have been brought to a head by the contemplated action of the State body, requiring the New York club to pay dues on a per capita basis of its full membership, the breach dates well back and was originally opened by conflict over matters of State policy in legislation.

"It is perhaps proper for me, as president of the American Automobile Association, to say that I do not regret the resignation, but welcome it. It is high time that motorists understand whether a mere name adopted in the infancy of the motor vehicle in this country, and which has since become a misnomer, entitles any local body in any city, no matter how great, to lord it over hundreds of other clubs in other parts of the country. Indeed, the time has now come to determine whether the American Automobile Association represents those motorists or whether they are to be represented by a small clique of gentlemen who manage a local social club. I, therefore, hail the issue and have no doubt of the result."

Early this week, the Automobile Club of America made official answer to Mr. Hotchkiss in this language:

"The board of governors of the Automobile Club of America were surprised to read in the public press the statement attaributed to President Hotchkiss of the American Automobile Association, that he 'welcomes the withdrawal of the Automobile Club of America' from the organization of which he is president, and 'hails the issue.' This statement, coming from a man of President Hotchkiss's judicial attainments, is the more surprising, because the Automobile Club of America is not aware that any 'issue' exists. The club withdraws from the affiliation with the American Automobile Association for the purpose of more effectively carrying on its numerous activities, not only for the benefit of its own members in all parts of the country, but also for motorists generally. The question of 'raising the dues' was not known to the board when it decided to withdraw, and so had no bearing on the decision.

"The Automobile Club of America, the first club formed in America and immediately constituted the sole recognized American representative of all the foreign Automobile clubs, which it still is, fought and won the early battles for motorists in this country, and needs no apology for its name. To these early struggles the American motorist is largely indebted for the rights which he now enjoys on the public highway, in the parks and on the ferries.

"The Automobile Club of America has always believed in fostering inter-club relationship by interchange of club privileges. It wishes the American Automobile Association every success in all its endeavors that make for the good of the sport of motoring, and will at all times be glad to render such assistance to this end as may be within its power."

Accompanying this official answer, which was sent to the press, was a short notice reciting that the Massachusetts Automobile Club had refused to reconsider its resignation from the A. A. A.. It is presumed that the Automobile Club of America included the item regarding the Massachusetts club as evidence of the good faith contained in its statement that it wished the A. A. A. "every success!"

While the item of dues has been permitted to cut a large figure in the rumpus, it is really of minor importance. It appears that until last week's meeting the annual dues of the New York State Automobile Association were at the rate of $1 per year, except that when a club attained a membership in excess of 500 members, no dues were paid upon such excess membership. Two clubs, the Automobile Club of Buffalo and the A. C. A., were the only ones to profit by the excess membership clause, and recognizing its unfairness and inconsistency the Buffalo club proposed the amendment making the dues $1 per member regardless of a club's strength. This change in the constitution cost that club $720 additional and had it remained within the association, the A. C. A. would have had to pay a total of $1,237 instead of but $500 as before. There were those who hung the withdrawal of the A. C. A. on this peg, but as a matter of fact the dues had little, if anything, to do with the matter. Although New York, both city and State long have enjoyed a great preponderance of representation on the A. A. A. official slate and on its committees, many of whom were drawn from the A. C. A., there are those in the club who apparently cannot reconcile themselves to the fact that it is not the "whole thing" or who cannot bow gracefully to the will of the majority, and this is the real basis of all the trouble. Chief of this coterie is Albert R. Shattuck, the first president of the A. C. A. and who ever since has been the man behind its scenes. His influence pervades the entire organization. Two years ago the club wanted to tinker with the State law. They had a rather drastic bill ready for introduction, but the State association very properly blocked it, and has continued to block it, which did not contribute to the good feeling. This year the State association prepared a new bill and had its machinery well oiled, when Shattuck turned up at Albany with diverging views and ideas of exorbitant fees, and upset all arrangements and made it appear that there was lack of harmony among the automobilists themselves. Quite naturally the association resented Shattuck's action and the A. C. A.'s withdrawal followed.

Not every one in the Automobile Club of America sympathizes with its action, and not a few members will continue their allegiance to the A. A. A. in their individual capacities. Among them are Jefferson Du Mont Thompson, chairman of the A. A. A. racing board and W. K. Vanderbilt, Jr., who also is a member of the board.

When Secretary Butler of the Automobile Club of America was asked to supplement the statement that had been given out over his signature, he responded that there was nothing more to be said.

"Do you consider the A. C. A. in the light of a national organization?" inquired the Motor World man.

"Only insofar as we will continue doing all in our power for automobilists everywhere, as we always have done," was the response.

"Do you intend to build up a national organization?"

"That subject has not been taken up. For the present nothing to that end will be undertaken. What may happen later I don't know. But if such a step were contemplated I do not think it would be wise to discuss it until the plans were formulated; the future will take care of itself."

"But should you determine on such a proceeding," persisted the interviewer, "would you not be handicapped by the section of your constitution limiting your membership to 2,000?"

"That is easily overcome. A vote would alter it."

"Do you think that the best interests of the automobilists would be served by two organization?" he was asked.

"I am not prepared to answer. If many clubs should leave the A. A. A. there might be need of an organization of wide scope."

"Your statement, issued yesterday, says that you have withdrawn from the A. A. A. for the purpose of carrying on more effectually your numerous activities. What do you mean by that?"

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"Well, take the subject of legislation. We had only two members on the A. A. A. legislative committee, and they found it to be impossible to convince the members from up the State that conditions in this part of it, say within a hundred miles of New York City, were different from those further north. Rochester, Syracuse, Buffalo, etc., had no experience with police traps and were desirous of standing pat on existing laws when we needed new legislation for our own preservation or protection, if you want to call it that. As free agents we will be better able to represent the metropolitan automobilists and actually our first duty is to them."

"Besides legislative activity, what else?"

"We will continue our road signs work and keep up our tour bureau, of course."

"Should you eventually decide to become a national body, would you organize something new or affiliate with some body now in existence?

"I can't say, because I don't know. That would have to be a question for the future to settle."

"Did the question of the increased dues have anything to do with your withdrawal?"

"Not in the least. Personally, however, I think that putting the same money into road signs will be of more benefit to motorists than paying it into the organization for dues. But I want to add this," continued the secretary, as the interviewer prepared to leave. "This club bears no animosity in any way to the A. A. A. We hope they will succeed, and we will do anything we can to aid them in any and all efforts for the good of automobilists. Our withdrawal is for our own good only and is not to be construed as a move against the organization in any way."

As Secretary Elliott of the A. A. A. was in Savannah, and no one in his office was authorized to discuss the subject, nothing additional could be obtained from that source.

When the subject was broached to a man who stands on middle ground and who is so placed that he is able to be unusually well informed, and who is unbiased, he did not hesitate to express his opinion.

"It is simply a case of too much Shattuck," he said in a tone in which there was a note akin to disgust. "Shattuck deserves a lot of credit. He is a hard worker and a mighty able one, but he has a personality that is a liability rather than an asset. As its president and since, he did much to make the A. C. A. what it is to-day, and though he may mean all right, it's hard for any one to be convinced of his good intentions. The A. C. A. is unpopular in many directions, and all because Shattuck's personality has permeated everything. The club house is a 'morgue,' and so full of flunkeyism that few men go there more than once if they can help it. There is about Shattuck a defined paternalism that doesn't appeal to Americans, and other clubs resent this same paternal attitude that the A. C. A. assumes. Quale and Hotchkiss, of the A. A. A., convinced the legislative body that the sliding fees from $3 to $15 was all the motorists could stand or would stand, but up bobs Shattuck, who says that $4 to $40 would be about right. As a result, some angry legislators and some angrier A. A. A. representatives. And Shattuck is the man who says foreigners are better than Americans. And there you have it! Why even the A. C. A. is tired of him and sooner rather than later, I think you will find that he and Dr. Skaats Wheeler, who helps him 'run' the club, will find their stools moved into a back row. Then you'll see more trouble and lots of it. There will be no new club, as has been prophesied, but a revolution in the old club itself."

At this point it was suggested that Secretary Butler's position could not be likened to a bed of roses.

"I should say not," came the quick response. "I wouldn't take Sam Butler's berth for $500 a week payable in advance—and incidentally," he added, "I'd want at least that sum for standing for Shattuck and his foreign airs and domineering ways, to say nothing of a few other individuals and incidents that are part and parcel of the job of secretary of the A. C. A."

To those who do not know Mr. Shattuck, it will be illuminating to say that in signing hotel registers, it was his custom to inscribe himself: "A. R. Shattuck and servant." The "servant" was the human being who acted as his chauffeur.

Big Penalties in Milwaukee Contest.

Held at a time of the year when road conditions are worst, it is not surprising that the three days' reliability contest promoted by the Milwaukee Automobile Trade Association on Tuesday, Wednesday and Thursday of last week, March 10, 11 and 12, did not prove the success for which the promoters confidently had hoped. Only eight cars, divided into three classes, started from Milwaukee on Tuesday and not one finished on Thursday with a perfect score. The best record was made by Ed Sanger, who drove a four cylinder Maxwell in the class for cars costing $1,800 and under, and who finished the three days' run with a penalization of 935 points.

Oshkosh was the first day's destination and the eight starters left Milwaukee by classes in the following order: Cars selling at $1,800 and under—Frank Roessler, Rambler; A. J. March, Reo; Robert Zastrow, Jackson, and Ed Sanger, Maxwell. Cars selling from $1,800 to $3,000—L. A. Finch, Thomas-Detroit and Edward Collier, Rambler. Cars selling above $3,000—S. W. Hartley, Cleveland, and Hal K. Sheridan, White. According to reports from the Beer City the roads encountered between Milwaukee and Oshkosh were frightful, but notwithstanding the prevalence of deep mud a majority of the starters reached there without great penalization. Zastrow was penalized 25 points for breaking a hood seal and 90 points for cleaning a spark plug, while Collier was charged 25 points for breaking the transmission seal and subsequently 175 points for repairs. All the others had perfect scores.

The 160-miles run from Oshkosh to Beloit on Wednesday played all kinds of havoc with the remaining perfect scores. Not one of the cars reached Beloit on time, which was not strange in view of the deep rivers of mud and water that were wallowed through. The worse parts of the run were between Ripon and Brandon, and between Madison and Janesville. In many places the roads were so bad that the cars put through fields and woods to escape the deep slough that filled the roads. Sanger, who finished the first day with no points against him, had trouble with one of the springs that cost him 550 points in addition to an additional debit of 185 points for being over three hours late. Zastrow lost a little over 200 points for minor repairs and was charged 480 points for being that many minutes late at Beloit. A. J. March lost 13 points for repairing a bearing and was charged for breaking the seals of the gasolene tank and of transmission nine times. Sheridan lost 150 points for minor adjustments and 230 points for arriving late, while Hartley suffered a broken spring, which cost 1,940 points, in addition to 515 points for being late. Finch had trouble with the driving shaft of his car and was debited 3,000 points, while Collier was laid up all day with a broken pinion.

Bespattered with mud six of the original starters checked in at Mliwaukee on Thursday after a hard day's run from Beloit. Hartley was the first to finish, followed by Sanger. None of the drivers experienced as much trouble on the last leg of the run as they did the day previous. All the cars but one were penalized, but the loss in points was nominal. Sanger was the only driver to finish the day's run without loss of points. Collier, in the Rambler roadster, waited all day for replacements from the factory and arrived in Milwaukee on Friday, 22 hours 45 minutes late. The observer's card showed no record of the time spent upon repairs so it was only charged 1,365 points for being late. The other Rambler had not reported when the committee announced the results. The total penalties as announced were as follows:

Ed Sanger, Maxwell, 935 points; Robert Zastrow, Jackson, 965 points; A. J. March, Reo, 1,085 points; H. K. Sheridan, White, 1,750 points; S. W. Hartley, Cleveland, 2,680 points; L. A. Finch, Thomas-Detroit, 4,823 points; Edward Collier, Rambler, 1,365 points.

Bridgeport Wants Vanderbilt Race.

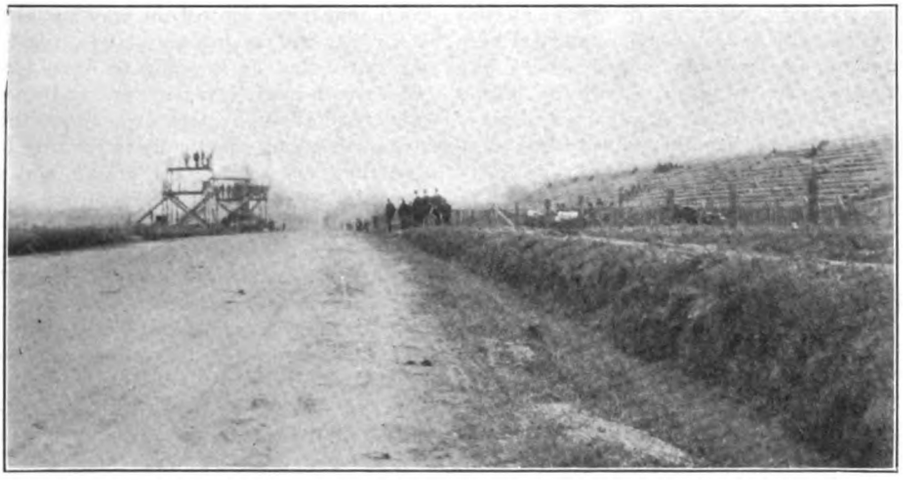
It transpires that Bridgeport, Conn., officially is in the field for the Vanderbilt cup race this fall. St. Louis and Savannah were already known to be anxious to provide a course for the race, but Bridgeport's candidacy was made known only last week.

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SPIRITLESS SPORT AT SAVANNAH

Lytle and Salzman Take Honors from Thin Fields—But Georgia Turned Out a Great Crowd.

Unless the "big" race at Savannah to-day turns the balance, the promoters of the speed carnival on the Florida beach and the road races on the Georgia roads will be able to shake hands and call it a draw.



GRAND STAND AND OFFICIAL STANDS ON THE SAVANNAH COURSE

The road races typify the A. A. A. sentiment; the flights on the wave washed sand represented the A. C. A. antagonism. Held in adjoining states and although far from the center of disturbance, it has been an open secret that each side has viewed the efforts of the other with more or less jealous eyes. The Florida sandfest came near to being a fizzle. Entries were few, starters were fewer, and finishers were almost, if not quite, as scarce as hen's teeth. These conditions were paralelled by the Savannah Automobile Club's road races, for stock chassis, the first of which were decided yesterday, 18th inst.

The first race—the one for runabouts—over the level but picturesque and well oiled 18 miles course, hung with moss in many places, was won by Herbert H. Lytle, driving a 30 horsepower Apperson. He completed the 10 laps—180 miles—in 3:35:41. Only two others started and but one of them finished. Lytle gained more than a full lap on J. B. Lorimer (40 horsepower Thomas-Detroit). The third starter, L. J. Zengle (50 horsepower Pennsylvania), broke a rear axle on the second lap, after placing to its credit the fastest circuit, 18:54.

In the second race, 180 miles for stock cars not exceeding 575 cubic inches piston displacement, George Salzman (70 horsepower Thomas "Six") finished alone in 3:02:25. The only other starter, F. W. Leland (60 horsepower Stearns "Six"), was put out of the running on the fifth lap by a broken connecting rod.

It follows that there was mighty little of real interest or excitement in either race.

The breakage of the axle of the Pennsylvania in the runabout race after having a lead of 1 minute 35 seconds over the Apperson, gave the driver of the latter car clear sailing for the remainder of the race. The consistent driving of Lytle was one of the chief features. He drove seven of the ten laps in a little over twenty minutes each. His time varied slightly in the three other laps owing to his stopping to change spark plugs and to take on gasolene. The ill fortune of the game seemed to follow Lorimer in the Thomas-Detroit. The ripping off of a tire caused the loss of many precious minutes, and later he had to stop again owing to carburetter trouble.

Increasing his lead on each lap Lytle succeeded in gaining a full lap before the race was over. Lytle's time for each of the ten laps follows: 20:29, 20:27, 20:20, 20:32, 26:42, 20:32, 20:20, 24:04, 20:56, and 21:19. Lorimer's time for each of the nine laps follows: 23:45, 24:21, 26:05, 26:55, 23:57, 20:02, 24:33, 25:09, and 22:11.

The cars were sent away at two minutes' intervals in both races. The Thomas car was first away in the second contest, but at the finish of the first lap the timing showed that the Stearns car had a lead of 40 seconds. There was intense excitement when it was announced that the latter car had broken down on the back stretch, as it gave the Thomas car a walkover. The fastest lap of the day came in the third circuit of the 18-mile course. Salzman drove at better than a mile a minute, the time being 16:51. The time of the car by laps follows: 17:35, 17:02, 16:51, 18:00, 21:45, 17:53, 17:37, 17:23, 19:33, and 18:49.

Savannah's interest was real interest. The city council had declared the day a holiday and the mayor, with other city officials, was present. A monster crowd lined the course and the grandstand, which will seat 5,000 persons, was full to overflowing. The stand was alive with flags and bunting.

The judges' stand on the opposite side of the track was covered with flags of different nations, while club flags and the emblem of the American Automobile Association were conspicuous. The soldiers paraded in groups through the streets on their way to the course, and every kind of conveyance seemed to be headed that way.



PICTURESQUE STRETCH OF THE MOSS-HUNG COURSE

The grandstand was placed about 25 yards back from the road, and along the course for a half mile each way was a wire screen fence. A brass band kept the crowd in humor when the cars were out of sight. The course was policed by 300 soldiers, 60 policemen and 50 flagmen.

To-day, the big race, 360 miles, for which there are eight entries, will occur, and of course a "bigger time" is anticipated.

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FRELINGHUYSEN IS "AGGRIEVED"

Thought Automobilists Would Seek to Compromise, but They Did Not—New Jersey Fight Grows Warmer.

It appears probable that when he appeared at the recent conference of New Jersey automobile clubs, Senator Frelinghuysen did so in the role of professional pilitician. He wore his stock smile and was as notable for what he did not say in defense of his "pickpocket" bill as for what he did say. At that time he was before a considerable crowd and at such times the professional politician usually is very circumspect. A few days later when two representatives of the New Jersey Automobile and Motor Club visited him in the insurance office in New York, where he earns a part of his living, they discovered a Frelinghuysen of another sort. He was disposed to be assertive, but he said enough to make fairly plain that the best he hopes to accomplish is to effect a compromise of some sort. He did not, however, obtain much comfort from the club men. When they left him, they were more than ever determined to fight Frelinghuysenism and all that it stands for.

"When Mr. H. A. Bonnell and myself interviewed Senator Frelinghuysen in his office in New York," said W. C. Crosby, chairman of the New Jersey clubs legislative committee in reporting the result of his visit," it was made clear that to get what they want, they have a fight on their hands which means fight from now to the end of election. The Senator seems to feel himself aggrieved because at the meeting of the automobilists, held in the local club on Friday of last week, he claims that no opportunity was given him to meet the automobilists in a spirit of compromise, and that no effort was made on the part of the legislative committee to meet on mutual ground.

"The Senator unalterably opposes any change in the speed limit, and while he claims that the license fees as proposed are excessive and too high, yet he places the responsibility of such license fees as have been suggested and proposed, on the Governor, and he further claims that to extend a tourist privilege in the State of New Jersey would bring about a condition that would not result to the benefit of New Jersey citizens or its highways.

"In fact, in the discussion, matters assumed such a serious position that the interview was closed by the request of the Senator himself, by using the expression, 'the interview can no longer be permitted'; the cause of taking such a position being that he was unaware that the Governor at any time stated to him, or showed to him by his conversation, that he was in favor of an extension of the speed limit, while the chairman of the legislative committee stated absolutely and unqualifiedly that the Governor had so expressed himself at the general conference in Trenton with the Governor, or by his expressions led those who heard him to the conclusion that he was in favor of a change in the speed limit, or in extending the speed limit to 25 miles an haur, or possibly 30, claiming that it was reasonable. While the Senator asserted that he did not hear any such expressions on the part of the Governor, the chairman of the legislative committee claims that the Governor was addressing directly the Senator in making his remarks or arguments in connection with a 25-mile-an-hour speed being reasonable, and one which would be more in accord with the use of the highways by automobilists, and yet be with perfect safety. The Senator unqualifiedly denied this, and the issue was taken, and it is a matter that can be very readily decided by the Governor himself, or by those present at the interview.

"In connection with the tourist privilege, if the autoists of this State are to secure for non-resident tourists the sovereign right of touring over the highways of the State, without paying a tax, they will have to fight for it, or secure it by the exercise of the constitutional right invested in Congress, and to that end it is most earnestly hoped that the great body meeting in Washington, which now has the proposed Federal license bill before it for consideration will find it to the interests of these United States not to permit individual States to erect bars and obstacles to prevent non-resident citizens who have conformed to the laws of their own State from enjoying the privilege of touring through or riding through a sister State.

"In regard to the question of license fees it has become an absolute necessity, and the automobilists may just as well face the situation to-day as at any other time, to fight the constitutionality of a law which permits the State Legislature to exact under the cloak of a registration or license fee a double taxation, which it is admitted has produced to the State in the last year something over $90,000, and which they deliberately propose with the distinct intention of making the department raise $200,000, it being admitted that personal taxation is already assessed against the owners of automobiles, and in the city of Newark personal property is assessed and automobile property is assessed also under a distinct and separate item.

"The Senator was told that unless the automobilists received some concessions in regard to speed, in regard to a tourist's privilege, and a license fee not in excess in any case of $10, that not only every effort would be made to defeat the proposed legislation in the two houses at Trenton, but the automobilists generally, the trade associations, the boards of trade and the manufacturing interests would be enlisted, together with the interests of the hotel associations, to fight the constitutionality of the law, on the ground of double taxation under the cloak of license or registration fees, and also to test the constitutionality of any law which requires that an automobilist, having conformed to the laws of his domicile State, shall be required to pay for the privilege of using the highways of another State, which is contrary to the sovereign right of every citizen of this great country, and in addition to this, every legitimate means will be used to defeat the Senator in his campaign in the fall for re-election. In order to get fair play from the automobilists' standpoint, every foot of the way has got to be fought; and as it now stands, the Senator states that he is going to have a conference with his fellow Senators and see exactly what position the legislators themselves will adopt, practically intimating that what they say will be the result, and the automobilists' or the manufacturers' interests will not be considered.

"In regard to the veracity, that was questioned on the part of the Senator, as to what took place at the conference with the Governor, or the representations made, they can be easily established by those who were present, and an effort will undoubtedly be made to provide such substantiation; that when a Senator misrepresents he is doing unqualifiedly and unjustifiably what he has no right to do."

Dealers to Fight Frelinghuysen.

With many out of town members included in the large attendance the New Jersey Automobile Trade Association, at its annual meeting in Newark, Thursday evening, 12th inst., gave full discussion to the proposed new automobile legislation. The association will fight the amendments to the existing law proposed by Senator Frelinghuysen, but will support the clause in the bill providing that lights shall be displayed on all vehicles at night. It was announced that the entire Hudson county delegation in the legislature promised to vote against the Frelinghuysen amendments.

All the old officers were re-elected for another year, while one new name was added to the executive committee. The officers are: George Paddock, president; J. W. Mason, vice-president; W. H. Ellis, secretary, and R. A. Greene, treasurer. The executive committee is made up of C. R. Zacharias, of Asbury Park; G. E. Blakeslee, of Jersey City; G. M. Russling, of Paterson; Inglis M. Upperson, F. L. Martin, Leonard B. Zusi and M. O. C. Hull.

Cop Sues Motorist for Damages.

Knocking over a policeman by running into him with an automobile may entail heavy expense. John J. Callahan, a former policeman of Pelham, has just brought suit in the Supreme Court at White Plains for $50,000 damages for injuries against William McCord, an automobilist of Greenwich, Conn., who, Callahan charges, knocked him over with his automobile when the policeman was trying to arrest him for speeding.

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AMERICAN ENTRY 500 MILES AHEAD

Is Now Traversing Nevada—French Motobloc Quits "Race" at Omaha—Queer Features of the Contest.

The New York-Paris "race" has penetrated as far as Nevada, the sole American entry, the Thomas car, which now is being piloted by Harold Brinker, having put up at Ely in the Sage Brush State last night. The day's run was 141 miles, the total distance from New York being 2,859 miles. The Thomas's nearest competitor, the Zust, is 500 miles behind—at Granger, Wyo.; the De Dion, which was laid up at Grand Island, Neb., is 1,200 miles behind the Thomas, and the Protos, which arrived at Columbus, Neb., is 70 miles in the rear of the De Dion.

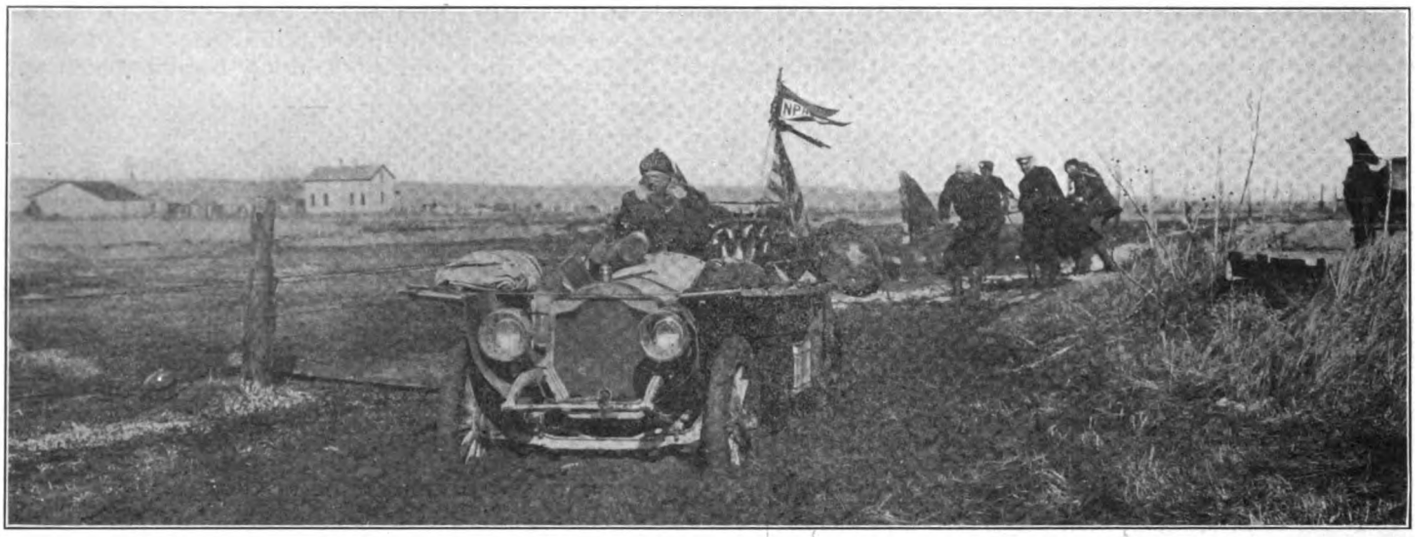
The story of the week is largely the story of other weeks—a story of struggles through snow, mud and water, with the American car far in front. The foreigners have had frequent recourse to the Union Pacific railroad repair shops, and the remarkable "race" spectacle has been presented of a car waiting three days for the arrival of a certain brand of tires and of other cars being loaded on railroad cars and shipped ahead for repairs and then shipped back again to resume the "race" where the breakdown occurred.

The biggest development of the week, however, was the apparent quitting of the French Motobloc. Mr. Godard, who is in charge of it, and who it is said is badly wanted in Paris to explain certain financial transactions during the Paris-Pekin "race," has found the strain too great for his pocketbook. The constant repairs and other "charges unforeseen," as they are described by Godard, induced him last night to load his car on a freight train at Omaha, where it had been shipped by rail and remained three days for repairs. The Frenchman says he means to journey by rail to San Francisco. At Omaha he said that, as he understood the rules of the "race," the contestants were not to be detained in the United States beyond three weeks and might take train on March 5, to be at Seattle on March 10 or earlier.

"Now," he added, "we have been on the way five weeks and have spent or strewn dollars by the road because the car has at each moment needed assistance to get out of the mire, snow, and mud in innumerable instances.

"On our part we have not emphasized the thefts by many people of our possessions, and when we object they tell us it was for the purpose of getting souvenirs. Then I cannot continue to carry along the Motobloc on account of charges unforseen and without end."

The Thomas car, in charge of E. Linn Mathewson, who succeeded Montague Roberts as its driver, rolled into Ogden, Utah, on the 15th, where he relinquished the wheel to Harold Brinker. The journey across Wyoming had been a struggle through snow, mud, shallow streams and over railroad cross ties. The car reached Evanston, Wyo., to which it was run on the tracks of the Union Pacific R. R. as a train, with the chief dispatcher of the U. P. in the role of conductor, the American car was able to avoid the impassable snow drifts on the road from Carter, but between this last named town and Church Butte, the roads, thick with soft mud, had to be used. On the 14th they entered Utah and encountered the worst roads of the trip from New York. The railroad tracks were again used to the detriment of the tires, three of which were destroyed.



THE AMERICAN ENTRY MIRED IN THE MUD NEAR MEDICINE BOW, WYO.



BUCKING THE SNOW IN WYOMING

Having run day and night for 25 hours, they entered Ogden completely fagged out. Of the last 50 hours Mathewson had been at the wheel for 47 of them. Snow and mud had been continually encountered, and he was glad that his work had finished as Ogden was the place where Harold Brinker was to succeed him as driver.

Until 4 o'clock of the following afternoon the car was given a general but hasty overhauling. At this hour, followed by a procession of the Ogden automobilists, the trip was resumed with Brinker driving. By way of variety several sand storms were run into and tortured those of the crew who did not possess good goggles; good roads were encountered, however, and no stop of any length was made until Cobre was reached, 182 miles from Ogden. The hardship of this journey lay in the fact that it was made perforce on empty stomachs. At Montello, after a run of 162 miles, the food that was obtainable was not fit to east, 20 miles further, in Lucin, Utah, the meal consisted of salt mackerel and tea. Cobre, however was able to furnish a good square American meal. Meanwhile the foreign cars were having their own troubles far behind.

After waiting 24 hours at Paxton, Neb., for a sprocket and chain the Zust made the trip to Cheyenne, Wyo., without incident.

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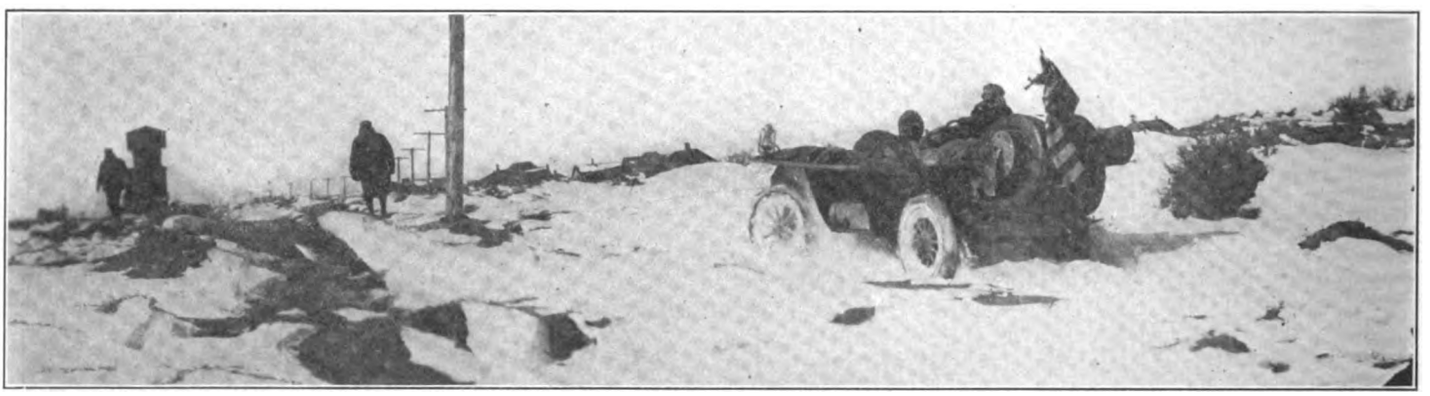
Sirtori gave his Italian car on overhauling in Cheyenne, preparatory to crossing the Rockies. In that city the hospitality of the natives so impressed Haaga, the German mechanician on the Italian car, that he declared his intention of returning and making it his home after the car reached Paris. The overhauling in the U. P. shops was thorough and the 57 miles to Laramie was quickly traveled. After a stop for lunch they proceeded to Dana through heavy roads, which grew much worse as Medicine Bow was approached. When 5 miles from this town the car was abandoned until horses could be procured to drag it on.

Although the lighter Thomas had been able to cross the North Platte river on the ice, Sirtori was afraid to risk his heavy car in an attempt to do likewise. He finally arranged with the U. P. to cross on the railroad bridge, so he bumped over the trestle and was encouraged to find fairly good roads on the other side. With the car in good shape and the roads fair, good time was possible and he gained on the American, reaching Granger, Wyo., on Tuesday, after a 30 mile run. As the crew was tired, it was determined to sleep here.

The crew of the De Dion, after traveling without incident for 29 hours with neither food or sleep, determined to spend the night in Missouri Valley, Iowa. On Friday, the 13th, they broke a driving pinion and were forced to spend three days in Crescent, 10 miles from Omaha, waiting for the new parts that were being made in the U. P. shops of the latter city. Starting again on Sunday night. St. Chaffray announced that he hardly expected to catch the Thomas before Alaska was reached. Better roads were found the next day and the trip to Fremont was made with no incident other than an announcement from St. Chaffray that he had found a lot of screws and pieces of iron in the gear case. He presumed they had been put there by a practical joker. Three miles out of Grand Island the DeDion broke a spring and was towed back to await another from Cheyenne.

Hard luck was the portion of the Protus. Having made 38 miles after a day of travelling they reached Ames, Iowa with all tires used up. The character of the race was made evident. It waits even for tires from Europe. After a three day's wait the tires came and the car was driven the 100 miles to Dennison, in rapid time. Here another banquet greeted Lieut. Koepper, whose progress has been marked by these convivial spreads of various German societies. In one of his speeches Koepper remarked: "I have a good car, in perfect condition, able to make good speed, yet I find myself a month on the road and advanced only 1,500 miles. Our main trouble has been tires."

The Motobloc, having received a complete overhauling in Clinton, Iowa, where it had been shipped by train from De Kalb, 80 miles away, was pronounced fit to resume, and Goddard hit on the more or less happy thought of making up the 80 miles by running back 40 miles and then returning over the same route to Clinton. In this way he did the requisite mileage, but it was not over the prescribed course. However that matters little in "races" of this kind, and the trip was continued to Cedar Rapids, where the solid tires gave way to pneumatics. Continuing the car was lost somewhere and wandered about Iowa until set right by a native after it had been caught in a terrific rain storm which drenched the crew. Tama was reached Sunday night and Ogden on Monday. The heavy roads prevented over 17 miles being done for a whole day's work. Near Carroll something went amiss and the car was shipped to Omaha for repairs. After which Godard practically announced he had had enough and would quit.



HITTING THE HIGH SPOTS IN THE ROCKIES

Officials Chosen for the Carnival.

Having finally determined that the principal features of Carnival Week are to take the form of a night parade and a hill climbing contest—by day, of course—the New York Automobile Trade Association is now arranging the details of the celebration that is to mark the tenth anniversary of the introduction of automobiles in New York. The parade is to occur on the night of Tuesday, April 7. The officials for it were chosen late last week, as follows:

Judges: President Colgate Hoyt, of the Automobile Club of America; A. R. Shattuck, ex-President Robert Lee Morrell, and Dr. C. B. Parker, of the Long Island Automobile Club. R. G. Howell, the grand marshal, has appointed the following aides for the various divisions: W. I. Fickling, first division, composed of cars of 1903 and earlier, old racing cars, and the Briarcliff racers; I. H. Manning, second division, composed of dealers' stock models; Alexander Howell, third division, composed of decorated cars; H. E. Wagner, fourth division, composed of commercial vehicles. Each marshal will be allowed to appoint as many assistants as are necessary in his own division.

The exact date of the hill climbing contest has not yet been determined on, but it will be either Monday, April 6, or Thursday, April 9. The earlier date is favored by many on the theory that the contest would serve to open the carnival with an event that would attract wide attention. The Fort George hill, which was first used for a competition last year, has been selected as the course for the climb, the necessary permission having been obtained from the city authorities.

It is believed that the contest will call forth from 50 to 100 entries. The entrance fee has been placed at $10. The subdivisions include six classes for gasolene machines, an electric class, a steam car class, and a free-for-all. The restriction of the steam cars to one class regardless of price, while the gasolene machines have several classes based on the selling price, has drawn forth a protest from George W. Bennett, manager of the White company's branch. Mr. Bennett holds that the steam vehicle should be admitted on an equality with the gasolene machine in the price classification divisions, but the Carnival committee maintains that it has a right to do as it pleases.

Spain Modifies Frontier Rules.

One of the annoyances of automobile touring in Europe has been lessened by the modification of oppressive Spanish rules enforced on the Franco-Spanish frontier. These rules have been the subject of many protests. That the protests finally have awakened the higher authorities is indicated by an unwonted display of courtesy and leniency by the officials at the frontier.

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FEDERAL RIGHT TO REGULATE

Constitutionality of Proposed National Law Argued Before Congressional Committee—Terry Makes Strong Points.

The hearing on the Cocks bill to provide for the Federal registration and numbering of automobiles when engaged in interstate travel was held by the committee on the judiciary of the House of Representatives at Washington, D. C., Thursday, March 12th, This bill, which was prepared by the legislative board of the American Automobile Association, attracted a notable gathering, and while despatches from Washington indicate that the bill will not be favorably considered, it stated that the bill is by no means lost. It is said that the committee adheres to the principle that the licensing of vehicles is solely a police power and therefore purely a state function and not within the constitutional scope of Congress.

Among the representatives of the American Automobile Association present were: William H. Hotchkiss, president American Automobile Association, Buffalo; Charles Thaddeus Terry, chairman Legislative board, American Automobile Association, New York; Frederick H. Elliott, secretary, American Automobile Association, New York; Russell A. Field, secretary, Long Island Automobile Club, Brooklyn; A. G. Batchelder, New York State Automobile Association, New York; C. H. Benedict, Automobile Club of Schenectady; Robert P. Hooper, Automobile Clubs of Germantown and Philadelphia; Paul C. Wolff, Pennsylvania Motor Federation and Automobile Club of Pittsburg; Jacob D. Rider, Lancaster Automobile Club; G. Douglass Bartlett, Quaker City Motor Club, Philadelphia; W. C. Crosby, New Jersey Automobile & Motor Club and Associated Automobile Clubs of New Jersey; R. A. Green, treasurer, New Jersey Automobile Trade Association, Newark; J. H. Edwards, Automobile Club of Hudson County, Jersey City; William H. Hunt, Automobile Club of Hudson County, Jersey City; Walter S. Schutz, counsel, Connecticut State Automobile Association, Hartford; F. T. Staples, vice-president, Connecticut State Automobile Association, Bridgeport; F. C. Donald, president, Chicago Motor Club, Chicago; Sidney S. Gorham, Chicago Automobile Club, Chicago; Robert B. Caverly, president, Automobile Club of Washington, D. C.; LeRoy Mark, secretary, Automobile Club of Washington, D. C.; Charles J. Forbes, Jr., secretary, Cleveland Automobile Club; Dr. A. B. Heyle, Cincinnati Automobile Club; Hon. F. H. Gillette, Automobile Club of Springfield, Mass.; L. R. Speare, Bay State Automobile Association and Massachusetts Automobile Club, Boston; Osborne I. Yellott, president, Automobile Club of Maryland, and Maryland State Automobile Association, Baltimore; John Bancroft, president, Delaware Automobile Association, Wilmington; F. E. Chapman, West Virginia State Automobile Association; George Ade, Indiana State Automobile Association; S. Royer Davis, secretary, Automobile Club of Philadelphia, and chairman of the Legislative Committee Pennsylvania Motor Federation.

Mr. Terry also appeared as general counsel for the National Association of Automobile Manufacturers. The Professional Chauffeurs' Club of America was also represented by President Sullivan and ex-President Walters, with Xenophon P. Huddy, Esq., its counsel. The latter discussed the bill briefly, urging chiefly that it be amended so as to permit the federal registration of chauffeurs while operating motor vehicles in states other than those of their residence.

The hearing was opened by President Hotchkiss, who briefly pointed out the necessity for interference on the part of the federal government to protect the motorists of the nation while operating in those states which require the registration of non-residents and use the requirement as a means to taxation.

The principal argument was made by Charles Thaddeus Terry, Esq., chairman of the Legislative Board of the American Automobile Association and representative of the National Association of Automobile Manufacturers. Mr. Terry's presentation, both of the facts which make such legislation desirable and necessary, and of the constitutional argument in favor of the bill, was stated by Congressmen present to be one of the most brilliant ever heard by the committee.

It was practically conceded by the committee that legislation of the kind asked for was necessary, and that it should be accorded if Congress had power under the federal Constitution to regulate the registration of motor vehicles when operated in states other than those of their owners' residences. It was apparent at the outset that, the question being an entirely new one and the powers of Congress being necessarily limited to its control over commerce between the states as granted to it by the Constitution, and as construed by the commerce decisions of the Supreme Court, the problem to be solved was whether Congress could in any way regulate the use of a pleasure vehicle, when operated on the highways of a state other than the state of the owner's residence, in other words, when engaged in interstate travel. It was apparent, also, that most of the members of the committee had grave doubts as to such travel being within the meaning of the word "commerce" in the Constitution. Hence, when it is stated that after a two hours' presentation by Mr. Terry several members of the committee stated that while they had been very doubtful, they had been either wholly or almost convinced that Congress had the power to pass the Cocks bill, the high merit of Mr. Terry's presentation will be appreciated.

In substance, his argument was that though the word "commerce" originally connoted an interchange of commodities from state to state, the supreme court had from decade to decade widened the meaning of the word until it now included not merely trade, but transportation, the interchange of telegraph messages, the carrying of lottery tickets on the person of a mere traveler, travel itself, in fact, intercourse between the states in the broadest possible sense of that word. It can be stated with some confidence, that as to this the committee seemed to agree with Mr. Terry. In other words, he demonstrated to the committee that Congress had power to legislate concerning the registration of the newest means of intercourse, or intercommunication, between the states.

Mr. Terry also called attention to a line of decisions by the Supreme Court, which held that under the commerce clause of the Constitution, the federal government had power to pass laws which would prevent one state from exacting license fees, tolls or taxes, either from vessels or from their pilots or masters, when plying navigable waters entirely within a state, other than the state where the vessel was enrolled; and called attention to the fact that there was in principle no difference between the natural highwtys of a state or nation, that is the waterways, and the dirt highways, and also that there was no difference in principle between a vessel navigating such natural highways, and a wheeled vehicle using such artificial highways. Asked by Congressman Malby of the committee, whether there was not a distinction between vessels engaged in interstate trade and purely pleasure vessels, Mr. Terry called attention to the case of the yacht "Yosemite," in which the Supreme Court held that there was no such distinction and that a vessel operated between ports of different states, and purely a pleasure yacht, was properly subject to a law preventing exactions by states other than that of its enrollment, and that this statute rested solely on the commerce clause of the Constitution.

While the chairman of the committee and several of its members repeatedly asked questions which indicated that they had grave doubts as to the constitutionality of the bill, Mr. Terry's argument made a deep impression and entirely convinced several of the committee. It is not likely that final action will be taken on the bill for some weeks, owing to other matters pressing on the attention of the judiciary committee, but, it is confidently expected by Mr. Terry and his associates, that such action will ultimately be favorable to the bill.

Interviews with members of Congress not on the judiciary committee, led to the conclusion that should the bill be favorably considered by such committee, the bill will pass without substantial amendment or opposition.

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MUST GIVE TWO-THIRDS OF ROAD

Unusual Provision of Ohio's New Bill—Graded Fees and Other Features of the Measure.

Automobile legislation in Ohio has progressed during the present session as far as the passage in the Senate, on the 12th inst., of Senator Ward's bill which includes a provision for speed limitations which cannot be changed by local ordinance or laws. This feature of the measure, which passed with only one vote against it, threatens its future even in the Senate, where it will have to be reconsidered because of errors made in amending it during its progress. Now, it is said, certain senators from the country will endeavor to amend it so as to take from the State the power of speed regulation and restore it to the counties, villages and cities. The limits specified by the bill as it stands are 8 miles an hour in business sections of municipalities; 15 miles in other sections of municipalities, and 20 miles in the country.

The bill requires the registration of all automobiles by the Secretary of State, the scale of fees being $3 for cars up to 12 horsepower; $5, up to 20 horsepower; $10 up to 50 horsepower, and $15 for higher powered machines. Dealers get special licenses for $10 for each type of car. Owners must carry their certificates of registration with them, and the driver of a borrowed automobile must carry the written consent of the owner. Chauffeurs must register at a cost of $2 for license. Non-resident owners must only comply with road rules and the regulations concerning equipment, if they are registered in their own states.

License numbers must be displayed front and rear on machines. Bills, horns and brakes are required, and lights displayed must illuminate the license number.

The road rules require that the motorist must slow down and stop when signaled so to do by the driver of a horse vehicle. Also he must give two-thirds of the road to persons with horse vehicles whom he meets.

Motorists arrested are to have right of immediate hearing or of giving bail not to exceed the maximum fine for the offense charged. The Secretary of State is to register cases of arrest and conviction and notify all county clerks of the same.

Penalties are provided as follows: Fines of $25, $50 and $100 and 30-day sentences are provided for first, second and third violations of registration, speed, equipment and road rules sections of law. Using fictitious license number or one belonging to another draws fines of $25, $50 and $100 with 60-day sentences, according to the offense. Failure of chauffeurs to register draws fines of $50 and $100 and suspension of right to be registered for two years. Failure to show written consent from owner for use of machine draws penalty of $200 fine and six months' sentence. Revenues from this source are to be used for maintenance and repair of roads.

Anti-Tire Chain Sentiment Spreads.

Anti-tire chain sentiment has penetrated to the senate chamber at Trenton, N. J., and has resulted in the introduction of a bill by Senator Leavitt. It would amend the motor vehicle act by providing that no motor vehicle shall have chains on its tires when using gravel or macadam roads.

The Fairmount Park Commission of Philadelphia also has carried out its intention of prohibiting the use of chains on the tires of automobiles when using roads in the park. The commissioners heard automobilists on the matter several weeks ago, as reported in the Motor World, and in their rule, adopted on the 12th inst, they exempt Belmont avenue. As further indicating an intention to treat automobilists fairly they agreed to ask councils for money necessary to asphalt the north side of Girard avenue, between the bridge and Parkside avenue. This improvement is contemplated with the idea that it would be a convenience to automobilists bound for points on the main line who now use park drives.

Arkansas Automobilists Organize.

With promise of becoming a lively factor in the motoring world, the Automobile Club of Little Rock (Ark.) has organized in that city, to affiliate with the A. A. A. The officers chosen were: President, Moorehead Wright; first vice-president, J. P. Runyan; second vice-president, J. N. Heiskell; secretary, Irving S. Hirsch; treasurer, Perry Stifft. The officers named, with E. P. Ladd, C. A. Pratt, J. E. Osborne, W. B. Miller, and J. A. Van Etten, will compose the board of directors. Capt. C. A. Pratt was named as director to represent the Arkansas association on the A. A. A. board.

Kentuckians Incorporate State Association.

The Kentucky State Automobile Association, comprising the Louisville, Legington and Owensboro clubs, has been organized and incorporated with the following officers: President, Ira S. Barnett, of Louisville; vice-president, F. R. Toewater, of Lexington; secretary and treasurer, Walter Kohn, of Louisville; directors, Louisville club, Ira S. Barnett, Dr. Lindsay Ireland, Walter Kohn; Gluegrass Club, of Lexington, F. R. Toewater, E. H. Alexander; Owensboro Club, J. T. Dawson, Allen Reid. The club will affiliate with the A. A. A.

Planning for Road Around Two "Knobs."

Jacobs Ladder and Morey's Hill, the two famous and neighboring "rises" near Lee in the Berkshire Hills, on the route between Lenox and Springfield, Mass., may lose their terrors for tourists. Efforts are being made in Boston and elsewhere to raise a fund of $15,000 for the purpose of building a road around the two "knobs."

PREPARING FOR THE GLIDDEN TOUR

New Rules Will Not Permit a Tie to Remain Unbroken—Allowances Likely for Tire Troubles.

One feature of the revised rules for the 1908 A. A. A. tour and contest for the Glidden trophy that is certain to cause general commendation, is a provision that cuts the string the Buffalo Automobile Club has had attached to the Glidden trophy ever since it first was offered for competition. It is understood that the new rules will provide for a run-off in case of a tie between any two clubs. Under the old rules the trophy had to be distinctly won from the holding club by some other organization, and in 1906, when the Buffalo club was in a tie with some others, the Buffalo club retained the trophy. This year if the Buffalo club finishes in a tie with another one or two, it will have to fight it out with them on the road.

The rules have not yet been officially given out, but enough of their probable character is known to permit of discussion. The plan for awarding the trophy this year will be an improvement on that of last year. The desirability of a club being able to enter a team composed of one make of cars has been considered and one club will be allowed to spilt up nine cars into three teams of three cars each, or six cars into two teams. The trophy will be awarded on the basis of club teams, probably to the club having the most teams with clean scores, or in event of no clean scores, to the club standing best in the penalization table. The penalization system will be the same as last year.

Another interesting provision that probably will be made is one concerning deducting the time lost because of tire trouble. Many manufacturers object to having to make up the time lost in the repairs, because tire troubles are a gamble, pure and simple; but it was pointed out that if the rules provided for allowing the time spent fixing tire some would deliberately puncture a tire and repair it, in order to take time to let the engine cool, should it become overheated. It is likely that this objection will be met by a rule that time spent in tire work will be allowed, provided the engine is kept running.

Another interesting point about this year's tour is that all possibility of discussion among the committee in charge has been done away with and there will be one executive head to it, F. B. Hower, who was the actual manager last year, although a committee was nominally in charge. This definitely will fix all responsibility while the tour is in the field. It is supposed that Mr. Hower has learned to enforce rules and routes as they are laid down and not merely when and how he thinks they should be enforced.

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FACTORS AFFECTING TIRE LIFE

Scientific Reasons for the Rapid Wear of Back Tires—Typical Cause Explained and Others Specified.

Many motorists have had occasion to wonder why their back tires wore out so much more rapidly than the front ones. Generally speaking, the all-inclusive answer to this question has been that the traction to which the drivers are subjected is sufficient to account for the difference. In a paper recently presented before the Royal Automobile Club of Great Britain, however, Mervyn O'Gorman, the well known scientist and pioneer motorist shows that a number of other factors also ought to be taken into account as having a very important bearing on the matter.

"Many parts of a car seem to have nothing to do with tires until one dwells upon their elementary functions," he remarks.

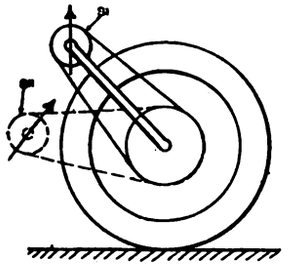


Fig. 1

"For example, nothing seems more inert in this connection than a distance rod. Considered as the piece through which the car is pushed forwards, it is known to be in compression and accordingly stiff. As being the piece which is connected both to the frame and the axle it must be hinged at the fixing, and as the sides of the car often rise and fall unequally on the springs, the distance rod must also be pivoted for side movement at the hinge. . . . .

"With a chain driven car the distance rod is often supposed to prevent the taut side of the chain from varying in tightness when the car body moves up and down on its springs. If it fails in this the drive to the road wheels will be irregular and the tire will rub. Looking into detail shows us that it does fail, and the question to be answered is simply this: Is the tire rubbing due to this cause negligible? To study this we will first suppose the car at rest, the back road wheels prevented from turning, and a very heavy weight put on to the chassis over one of the back springs. This lowers the chassis, and with it the front sprocket (Fig. 1), from the position S′ to S″, which we may suppose to be the extreme movement when the car "bumps," say, 8 to 10 inches.

"The distance rod prevents S′ from leaving a circular path round the back sprocket. The upper chain is carried round with it, and is obviously wound on to the back sprocket. At the same time a certain amount of chain is, for a similar reason, wound off the moving one. If the sprockets were of equal size, the amount wound off would equal the amount wound on to the

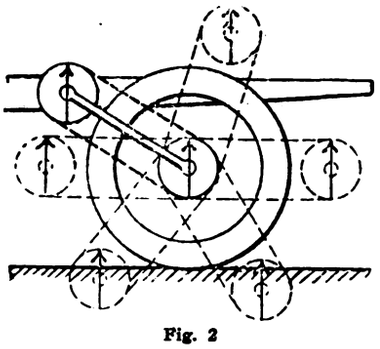


Fig. 2

other, and neither would turn on its axis, as shown in Fig. 2. But normally the front sprocket is the smaller, and accordingly it has to rotate as shown in Fig. 1. It is very important to appreciate the amount of this rotation and its direction. If a small sprocket moves once round another having a larger circumference, a length of chain equal to that larger circumference will be wound onto the larger sprocket. If,

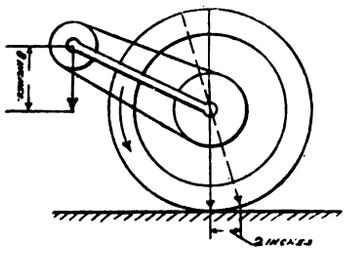


Fig. 3

then, the smaller sprocket is one-third smaller, as is common, it will have to rotate through one-half of a revolution, and proportionately for fractions of a revolution. The direction of its rotation will, as shown by the sloping arrow in Fig. 1, be clock-wise for a downward movement to the dotted position. It will be noted that this tends to turn the engine backwards, after taking up all the back loss or play in all the gears engaged, including the chain.

"In practice, when the car is not station-

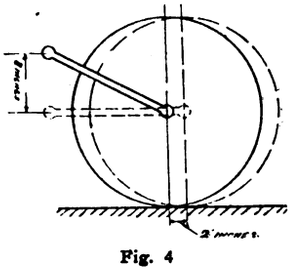


Fig. 4

ary, the converse is usually the case—namely, the front sprocket, S, is prevented from backward rotation by the engine or the foot brake—and the back wheel must unless the chain snaps, rotate forwards (the backlash having already been taken up by the engine pull). Every time the tire rides over a lump this occurs in some degree, and when, as sometimes happens, the car body oscillates vertically over the full range of clearance of the springs, the movement is greatly exagerated.

"It is easy enough to calculate the amount of movement, but it is more convincing to illustrate this forward rotation by a model made to half scale of a chain drive and road wheel. The front sprocket of the model is locked, and the road wheel free to turn. Taking a vertical downward movement of the springs of 8 inches, and the usual dimensions of wheel and sprocket given in Fig. 3, the wheel turns through such an angle that the tire slips forward 2 inches. Simultaneously the radius rod, in moving from a sloping to a more horizontal position, pushes the axis of the wheel through an additional space of 2 inches, as shown in Fig 4. It is now necessary to see how long an interval of time this movement takes. If the time is very short, the inertia of the car and engine respectively

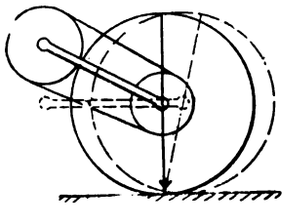


Fig 5

will prevent their moving forward, and the wheel will consequently have to skid. . . .

"A simple calculation shows that a bad road hollow 2 feet wide traversed at 40 miles per hour is passed in less than 1-29 second. Whether or not the wheel follows the profile of the ground on the first part of the down slope, it will be found in most cases that by the time it has struck the far side of the puddle and rebounds from it the car body will have started its downward movement. We have, therefore, the wheel moving up and the car body moving down with considerable velocity. As far as I could judge when noting this, the car had not moved three feet beyond the hollow before the bump occurred. At this speed three feet represents 1-20 second, and during this short time the car would either have to be thrust forward 4 inches, or the road wheels must skid round that amount.

"To determine which must occur is quite easy, thus: To thrust a 3,000 pound car forward 4 inches in 1-20 second, is to give it an added velocity of 80 inches per second, or 6.28 feet per second, or 4.4 miles per hour, and this would be done in 1-20 second. Such a push, if continued for a whole second, would give a car a velocity of 88 miles per hour (in one second), and would require a pull of 12,000 pounds. This pull is seven or eight times the adhesion between the ground and the back wheels, so that we may safely say that the wheel skids, both

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at this speed and at speeds of one-half and one-third of this amount. The amount of the skid is 11 per cent., which represents work done in wearing and heating the road, raising dust and heating the tire. The power to effect this work is derived from the engine, and is a loss. If we suppose that on the average this loss amounts to only 5 per cent., because the average travel of the springs may be taken at 4 inches, we still find quite an important diminution of speed when the car is running all out. A remedy has occurred to me for this trouble in chain cars. I have two different sprockets from those we have been considering, both for the back and front. Contrary to normal practice, the small one is on the road wheel, and the large one in front. I will recall that we had 2 inches of skid due to the sprockets and 2 inches more due to the radius rod, and all I propose to do is to work these two skids in opposite directions, and as nearly as possible simultaneously. This I show in Fig. 5, where at the end of the downward movement of the sprocket the two movements have, within a certain margin of error, cancelled out. In this particular case the sprockets are of the same diameters as were used before, their positions only have been exchanged."

Speaking of cars driven by propeller shafts, the author refers to one which "has the curious property that, if fitted with a fine ratchet sprag, it can be caused to travel forward by the persons in the tonneau simply jumping up and down so as to work the springs, and illustrates the effect that a road shock has in causing the road wheels to turn forward, or, failing this, to skid.

"From the point of view of the heavy unsprung weight on the back axle, the propeller shaft car should be substantially harder on tires than the chain driven vehicle, and in some cases it is so. In other methods of construction such care has been taken of what I have called the 'radius-rod effect,' that in spite of the above indicated disabilities they are actually less wearing to tires. In the propeller type car the following provisions must be made: (a) A universal joint to allow the transmission to be flexible. (b) A push rod (corresponding to the radius rod of chain cars) to push the car along. (c) A torque rod, sometimes the springs, sometimes the propeller shaft itself, arranged to take the reaction of the drive; that is to say, a piece which tends to lift the front of the car when the engine exerts its power. Each of these provisions has problems incidental to it, which bear on the wear of tires. . . . . Both causes of wear mentioned in connection with chain driven chassis are found here in some degree: (1) The axle is forced backwards, because the horizontal projection of the push rod is increased. (2) The wheel is caused to rotate through an angle swept out by the push rod, and these two troubles are additive.

"Lastly, in those numerous cases when the push is taken through the springs the flattening of the spring gives a further movement backwards to the axle, and this movement is again additive. . . . .

"In the best type of live axle cars employing two universal joints, a slide, and a parallelogram of radius rods, the effect we have been considering is reduced in practice to less than one inch of tire movement for 8 inches of spring movement. All that is now wanted is that a demand should arise for cars which are easy on tires, as against cars which are simply cheap in capital cost."

By way of conclusion he adds a few other causes of wear in the rear tires of the car, not enumerated above, nor belonging in the same category, which are as follows:

"(1) Engine driving effort: (a) Even if the turning moment is uniform. (b) Un-uniform turning moment exaggerates this wear somewhat, but the un-uniformity of the ordinary engine of four or more cylinders is smothered under the other un-uniformities introduced elsewhere.

"(2) Clutch: (a) If fierce or let in roughly. (b) If fierce, especially when reversing, as the torque takes load off the driving wheels.

"(3) Radius rod effect: (a) With chains I believe this to be practically curable by adopting my relationship between sprockets and radius rod. (b) With propeller curable by two universals, one slide, and a proper parallelogram of distance rods.

"(4) Transmission: Part of the transmission often introduces an un-uniform conversion of speed—e. g., one universal joint (so does a chain, both in a small degree usually).

"(5) Weight causes bending of side walls, and therefore fatigue of tire. The drive of the engine transfers weight, say 100 pounds, to the back wheels, and adds to this effect. Unsprung weight on back axle causes heavy blows on the ground, the momentum of which adds further to this effect.

(6) Brakes cause skid and wear. The effect of applying the brake is unfortunately to take weight off back wheels. Unbalanced brakes: Loss of adhesion by applying brakes to only two wheels, thus doubling the wear on them.

(7) The differential, owing to its unfortunate property of turning the wheel with least adhesion."

Importance of Cylinder Temperature.

Cylinder temperature as a vital consideration to the efficient running of a gas engine, is seldom taken into account by the average motorist, at least to the degree that should be done. So long as the motor does not become hot enough to cause pre-ignition or cold enough to lose power, no further thought is given the matter. As a matter of fact, even comparatively small changes in the temperature of the jacket water may have considerable influence on both the power output and the fuel consumption, as is shown by the results of tests recently performed on a Napier engine for the purpose of proving just this point. The maximum power output and minimum fuel consumption were developed with a jacket temperature of 149 degrees, Fahrenheit.

When the cooling water had been reduced to 115 degrees, the power fell away 3.64 per cent., while the consumption increased 4.8 per cent.; while with the water reduced to 56 degrees, the power dropped to 6.6 per cent. less than its maximum value, and the consumption rose to 11.5 per cent. above its minimum. Raising the temperature of the cooling water, instead of increasing the power and reducing the consumption, as might have been expected, produced just the reverse effect. At 185 degrees, the power had fallen away .66 per cent. of its original value, and the consumption had risen 1.38 per cent., while at 212 degrees, the power was still 1 per cent. less, and the consumption .55 per cent. greater. Temperature was the only available factor in this instance, as both load and speed were held constant. The values manifestly apply only to the motor in question, but the principle involved is an important one.

Automatic Chamferer for Gear Teeth.

It is only a short time, comparatively speaking, since even the advisability of chamfering the ends of gear teeth in automobile transmissions was considered open to discussion. Since the practice has become generally accepted, the method of developing this all essential little finishing touch has been left largely to that ancient retarder of mechanical processes—hand labor—or to such special devices as the ingenuity of the shop foreman might contrive. The result has been more or less unsatisfactory, ordinarily, and expensive as well. A thoroughly modern and expeditious attachment for performing this work rapidly and accurately and to any desired profile, has now been developed by the "Long Arm" System Co., Cleveland, O. It may be clamped to the table of a small milling machine and is absolutely automatic. It will handle gears of from 2 to 9½ inch pitch, and of 4 to 10 diametral pitch, and when run at proper speeds, will chamfer about 12 teeth per minute. The attachment is fully described and illustrated in the "Long Arm" Co.'s Bulletin 25.

Driving Attachment for Buggy Wheels.

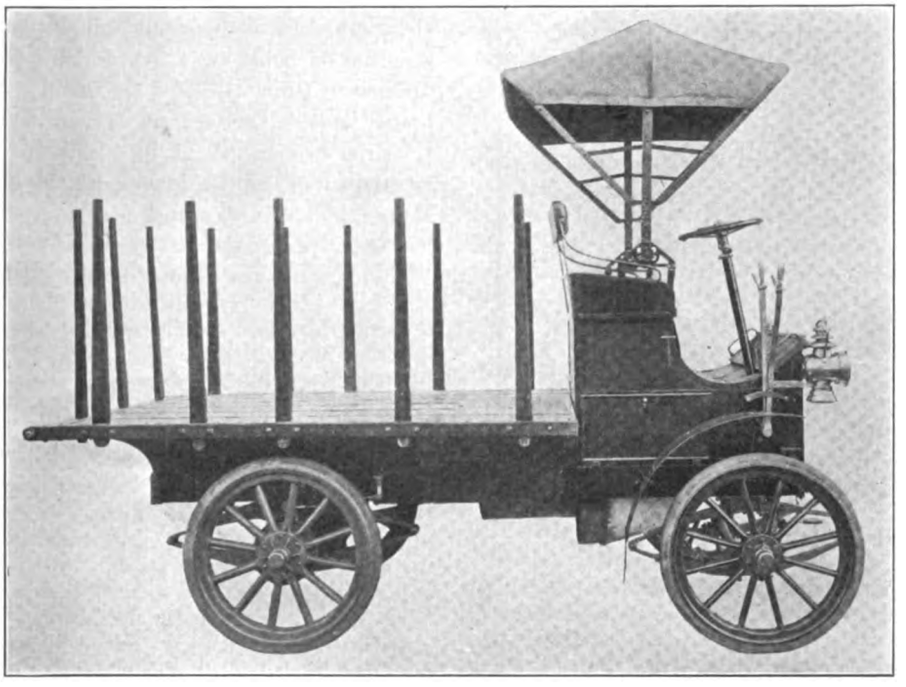
It would appear to be rather a difficult matter to attach a driving sprocket and brake drum to a common buggy wheel in such a way that it would be secure and durable, and it would prove quite as difficult a task as it appears unless just the right method were followed. The Cullman Wheel Co., Chicago, Ill., has developed a new method for effecting this attachment which is so important to the successful development of the modern high wheeled motor buggy, and a particularly simple one, too. Their counter shaft sprockets and differential gears which are designed for the same use are also an innovation in a very extensive line of sprocket and differential gearing.

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TESTS OF TRUCK PERFORMANCE

Results of Six Months' Practical and Experimental Service—Cost of Operation Under Various Conditions.

With the commercial vehicle, unlike the pleasure car, the crucial point is performance, in contradistinction to mere power, weight, speed, wheel base, or appearance. From this standpoint, the construction of the Franklin "2,000-pound" truck, which, despite its name, has a rated capacity of 3,000 pounds, must be considered highly creditable as developed from the results of data gathered in the course of six months' use of three of these little vehicles in and about the Syracuse (N. Y.) factory of the H. H. Franklin Mfg. Co. In this connection, it is to be observed that the running costs are higher than would otherwise be the case under similar road and mileage conditions, because the vehicles were used for experimental purposes frequently, which would tend to raise the cost of maintenance above its normal amount.



FRANKLIN TRUCK USED IN TESTS OF PERFORMANCE

Lumping the performance of the three vehicles and averaging the result, the performance per vehicle worked out at an average of 10 trips per day, over 40 miles of road, with a load of 1,500 pounds, making a ton mile average of 30 per day. For this, the fuel consumption works out at 3.4 gallons, and the oil consumption at .22 gallons. Counting the driver's wages at the rate of $1.87 per day, the average cost of haulage per day amounts to only $2.70. This includes besides the driver's wages, the cost of fuel and oil, and the cost of time spent in repairing the machine. Exclusive of the wage item, this factor amounts to just about 83 cents. Whence the cost of operating the vehicle is worked down to 2¾ cents per ton mile.

As to hill-climbing performance, which, next to load carrying capacity and cost, is the most important item in the commercial vehicle catalogue, one of these machines, carrying a 3,000 pound load was driven up the hill leading out of the main gate of the factory, which is a 14½ per cent. grade, the Geddes street grade, which is of 11 per cent. pitch, and the Irving avenue grade of 12½ per cent. The James street hill, which is a grade of from 7 to 8 per cent., also was covered, and on second speed.

By way of an economy test, the same vehicle was run over city pavements for a distance of 14¼ miles, encountering only one hill, and developing a consumption of 1.12 gallons of fuel, which represents an average of 19.7 ton-miles per gallon. Oil costs worked out at 66 ton-miles per quart. The average speed during the trial was 10.4 miles per hour. With a load of 4,000 pounds, the hill leading out of the main gate of the factory was again climbed successfully, as well as the entire length of the Geddes street hill. By way of an economy test, 9⅛ miles of city pavement were covered with the same load, at the rate of 10 miles an hour and with a fuel consumption of 2⅝ quarts, which is an average of 27.8 ton-miles per gallon. The oil consumption for this trip was only ½ pint, or at the rate of 73 ton-miles per quart consumed.

The 1908 Model J truck, with which these performances were made, is the light and compact little machine shown in the accompanying picture. It is driven by the 16 horsepower four-cylinder, air-cooled motor, equipped with the famous concentric valves which are a 1908 innovation in the Franklin line. Another feature which largely aids in its meritorious performance is the worm drive, which gives an unusually smooth transmission of power, with an astonishingly low friction loss. The wheels are 32 inches in diameter, shod with 2½-inch solid tires in front and 3-inch in the rear; the wheel base is 76 inches, and with the stake body shown, the platform area available is 60 by 72 inches.

Electrical Lubricator Telltale.

Safe to say the motorist does not live who at one time or another, has not been annoyed by the stoppage of the lubricating system of his car, and who would not welcome an infallible indication that the oil either is, or is not, flowing as it should. That the usual sight-feed glasses are weak in being useful only when there is sufficient light to observe them, is well known, but it required British ingenuity to devise the "Orleans" lubricator tell-tale, which has recently been placed on the market. Briefly, it consists of a small cylinder containing a piston, normally held at the lower end by iona spring, and serving as a regular connection between the lubricator and the bearings which it is intended to feed. In flowing through it, the pressure of the oil must raise the piston against the tension of its spring sufficiently for it to uncover a port in the cylinder wall. So long as the oil is flowing, the piston is kept part way up in the cylinder. As soon as the flow ceases, however, the piston descends to the bottom of the cylinder, while simultaneously contact is made between a finger carried by the piston rod and an insulated ring in the top of the device, whereby an electric circuit is closed and an alarm bell is rung, notifying the driver that something is wrong with the lubricator.

Big Mileage in Business Trips.

The family baking of many households in the eastern part of Long Island has been facilitated, it would appear, by what Michael Bruckner, of Riverhead, regards as the wonderful record of the Maxwell car with which his distribution of yeast is made. Bruckner has made his trips regularly during the past eight months in all sorts of weather, and over every variety of good, bad and indifferent roads, covering a total distance of more than 15,000 miles. He claims to have expended less than $100 for repairs.

Economy of Horseless Fire Apparatus.

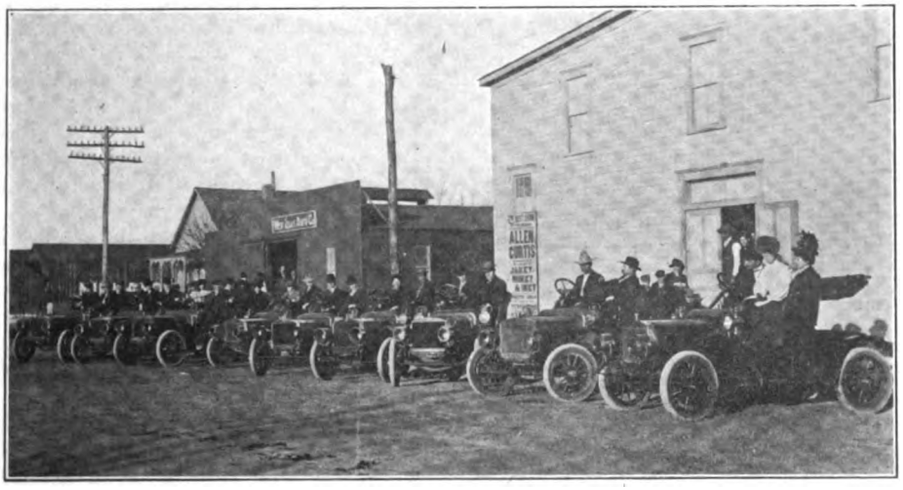
According to the fire commission of Springfield, Mass., the four automobile fire fighters in the department there, locally known as the "flying squadron," saves the city $189.20 per year, as compared with the cost of horse equipment. The commissioner therefore recommends the purchase of three combination chemical and hose automobiles to replace horse drawn apparatus, and expects to purchase additional chemical machines during the coming year.

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HERDING CATTLE WITH MOTOR CARS

How Texas Cowboys Use Modern Methods in Their Business—Some of the Advantages that Result.

Having adopted the motor car for use in the ambulance service, police patrol, package delivery and nearly all other forms of transportation for people and inanimate objects it would seem that the field of usefulness for the gas engine was pretty well covered. But another industry has found that the motor vehicle is practical and advantageous and not a few automobiles are now used as a substitute for the cow pony for herding cattle.



COWBOYS AND THEIR MODERN EQUIPMENT

In the little town of Midland, in the heart of the cattle country of Texas, the men interested in the cattle industry are using motor cars in preference to horses. The collection of Mitchell automobiles shown in the illustration with the exception of three cars that belong respectively to a doctor, a banker and the sheriff, are the property of the cowboys and cattlemen.

In Texas a small ranch consists of about 2,000 acres, the others run up as high as several hundred thousand acres. These immense tracts of land are usually some distance from the towns and cities; the use of motor cars therefore is quite natural as the ordinary means of transportation between the ranches and the towns. But to use the power driven vehicle, in preference to the cow pony, when driving cattle, opens up an avenue of usefulness that was inconceivable a very few years ago. When gauntlets and goggles supplant spurs and a rawhide, another of America's picturesque institutions will have yielded to the onward march of commercialism and progress.

How Bavarians Blackmail Motorists.

Blackmailing automobilists is said to be one of the most popular among schemes whereby bucolic Bavarians eke out the income afforded by their farms. A recent victim has turned upon them, however, and a farmer named Hofmaier, who lives in the vicinity of Bamberg, is on trial this week for blackmailing no less a personage than Duke Francis Joseph of Bavaria.

The duke recently was driving an automobile in that neighborhood and the allegation against Hofmaier is that, seeing the duke's automobile approaching, he detached his horses from a farm wagon and purposely inflicted a serious wound upon the animal. When the duke came up, Hofmaier accused him of having run into his wagon and caused the injury to the horse. A crowd of about 100 peasants collected around the motor car, and refused to let the duke depart until he had paid over to Hofmaier all the money he had and promised to forward the farmer $40 beside. The duke related the incident to the prince regent of Bavaria, who advised him to bring suit against Hofmaier, as there was reason to believe this method of blackmailing was spreading.

Boston Restricts Official Motoring.

Though no accusation of "joy riding" has been made against Boston's fire chief, he has been ordered by the Fire Commissioner to use the automobile, furnished by the department, only for fires in the suburbs and "special occasions." The fire commissioner states that, while he personally is in favor of extending the use of automobiles in the department rather than curtailing their service, he must practice economy, hence the order. The department owns four automobiles, two used by the fire fighters, one by the commissioner and the other by the superintendent of repairs.

Mattoon Club's Annual Election.

At the annual meeting of the Automobile Club of Mattoon (Ill.) the following officers were elected: President, H. W. Clark; vice-president, F. E. Thatcher; secretary, George X. Chuse; treasurer, Dr. W. C. Lumpkin; directors, J. F. Chuse, Bert B. Cole, and E. B. Tucker.

MOTOR CARS IN ANTELOPE HUNTING

Montana Man Shows How It Can be Done —The Fleet Animals Overtaken in Long Chase.

"Look not mournfully into the past, it comes not again." The day has gone when "the speed of the antelope" will serve as an illustration of the greatest rapidity obtainable.

M. L. Wordman, a prominent citizen of Lewistown, Mont., an automobilist and a sportsman, recently conceived the idea of hunting the fleet antelope and using his National automobile in the chase. In company with a chauffeur he left his home town at about 8 o'clock one morning and started for a spring 65 miles away, where he thought the speedy animals would be found. Two hours later he arrived at his destination and after driving around for a few minutes he saw, with the aid of a powerful spy glass, a herd of about 25 antelope, lying down, five miles away.

The machine was headed toward the herd and as the country was almost level and the grass had been closely cropped by thousands of head of sheep he could easily distinguish all holes and stones at some distance away, and thus could safely drive at a high rate of speed. The car and its passengers were within a mile of the antelope when it was seen that they were becoming restless. Speed was diminished and another quarter of a mile was traveled when the group of fleet-footed animals took fright and bounded away with a speed that would have disheartened an ordinary hunter.

With slightly increased speed the automobile followed for a short distance, then the throttle was opened wide and the chase begun in earnest. Away went the pursued but far faster went the pursuers, and in two miles the gap between them was only 50 feet. Woodman raised his gun and fired, and although the car was going 35 miles an hour, an antelope dropped. The car was stopped long enough for him to take the wheel, then the chase was resumed. In a few minutes they had again caught up with their prey and the chauffeur took a shot. Another animal dropped, and as that was all that the Montana game laws allowed, the hunt was over.

When the dead antelope had been dressed they were loaded on the car. The homeward journey was completed by 4 o'clock in the afternoon, about 150 miles in all having been covered. Woodman says that this was the first hunt for big game in an automobile, and he adds, "but it is my intention to repeat it next year, having fully convinced myself that my National car can easily outrun an antelope, the fleetest animal to be found on the plains of the great West."

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AUTOMOBILE AS SURGICAL AID

How It Made Possible a Major Operation and Saved a Life—Surgeon's Report of the Case.

Actual participation in a surgical operation, with the credit of assisting in the preservation of a human life is the most recent achievement credited to the automobile. W. B. Reid, M. D., of Rome, N. Y., tells the story in his report on a case of appendicitis furnished to the American Journal of Surgery.

Dr. Reid was summoned by telephone to consult with the family physician of Mr B., a farmer, and to operate, if necessary, in a case of suspected appendicitis. A run of fifteen miles in his automobile brought him to the patient's farm house about 6 o'clock in the evening. The professional history of the case up to that hour showed a rapid and alarming progress of a sudden attack of "cramps" in the stomach. Dr. Reid's diagnosis revealed what he describes as "acute appendicitis with perforation" and his advice in favor of an immediate operation was accepted. The kitchen was chosen as the operating room and the family "ironing board" was made to serve as an operating table.

"All of the country farm houses and many city homes have no other lights than oil lamps," Dr. Reid states in the beginning of his report, and he expresses his hope that the report may contain a suggestion helpful to anyone situated as he was, with a patient needing a major surgical operation, for which such light was inadequate, and whose condition would not permit of removal to suitable hospital surroundings. And here is where the automobile performed its part. It provided the necessary light. Dr. Reid says:

"The automobile was driven as close as practical to the kitchen window, the large searchlight lamp detached from the machine and passed into the kitchen. Rubber tubing ordinarily used for drainage was spliced by a glass drainage tube and used to connect the gas tank on the side of the automobile with the lamp in the kitchen surgery. The gas was then turned on, lighted, and the illumination found to be ideal. In fact, the light was just as good as in any well-appointed operating room."

After describing the operation, which was successfully performed, the patient eventually recovering, Dr. Reid concludes his report as follows:

"The pathological condition of the appendix, demonstrated at operation, suggests the probable outcome of the disease had we been obliged to have wasted time in his removal to a hospital. Next to the danger of time loss, we cannot but be impressed with the great danger in the mechanical disturbance of the parts in moving a patient in such a condition over rough country roads, which of necessity would tend not only to mechanically scatter the infection caused by the perforation, but by starting a peristalsis of the stomach and intestines, thereby also scatter the infection to such a degree as to cause general peritonitis.

"Next to the early diagnosis of the family physician and his prompt action, I feel that the automobile with its gas tank and lamp, was a strong factor in the means of saving the man's life."

Making a Mudhole Profitable.

Getting wealth out of holes in the ground is not confined to mining regions, for there are several reports of the somewhat rich yield certain New Jersey farmers are deriving from a mudhole on the Red Bank road a short distance this side of the intersecting road which leads to Matawan. Marshtown is the appropriate name of the little place nearest to the intersection, and conveniently located adjacent to the mudhole in question is a farm house. Several touring parties who made short trips through New Jersey on Sunday last returned to New York City with hard luck stories of muddy roads, and some of these parties had something to tell of this particular hole.

It was noticed by the tourists that when their machines settled into the hole there came no offer of assistance from the farmer and several of his friends who complacently stood at the fence watching the vain efforts to get out of the difficulty. When asked to bring his team and help the travelers the farmer demanded $5 for the work, which took but two minutes. This had to be paid, as the motorists were helpless and no other assistance was available for getting the car out of the mire.

There were four automobiles stalled at this place at noon Sunday, and it is said that a few days before four machines each paid $8 for a few minutes' use of the team. There is some suspicion that the road at this place is kept in bad condition as a trap for automobiles.

Jerusalem Sees Its First Automobile.

Of the many wonders that the ancient city of Jerusalem has witnessed, the latest, and to the present denizens of that city the most wonderful, was presented in the advent of the first motor car ever seen there. Of course it was driven by that indefatigable collector of touring records and experiences—Charles J. Glidden, of Lowell, Mass. Accompanied by Mrs. Glidden, he reached Perusalem rfom Haifa, Syria, on Friday, 13th inst. The sight of the great modern vehicle created a sensation among the residents.

"The A B C of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

ARMED AUTOMOBILE IN REAL WAR

Practically Tested in French Rumpus in Morocco—Stood Strenuous Marches and Was an Effective Fighter.

What service the automobile might be able to render in war has been illustrated in a variety of ways in connection with military manoeuvers in our own country and abroad. What it can actually do under the stress of real war has been shown by a car engaged in the French rumpus in Morocco. This machine, says a foreign newspaper, is a Panhard, fitted with three quick-firing guns. It left Paris on December 9, last. Six days later it had progressed so far as to arrive at the scene of, and take part in, the most decisive engagement of the campaign—that at Ain Sfa, where its usefulness was such that its commander, Captain Genty (a well known French amateur racing motorist, by the way), has since been decorated with the Cross of the Legion of Honor, "for distinguished service in the Moroccan campaign."

This particular chassis was of standard type, 40 horsepower, with only normal clearance. Its facility of manoeuvering, therefore, must set at rest forever the pessimistic tongues so often protesting that "cars were all right on roads, but for use in the veldt or desert, or indeed on any broken ground, were quite impossible." The journey to the front of this mitrailleuse was sufficiently beset with trouble to form quite a test case. From a few hours after it left the ship nothing at all like a road could be used. Rivers had always to be forded, their banks in many cases having to be followed for miles before this was possible.

The land within a considerable distance of any African stream from the Nile downward is always of the most irregular character, and when once a stream was crossed the ground on the newly reached side would be found to bear miles of bowlders, sprinkled anyhow, so irregularly as to make mile-an-hour walking, or large stretches of cactus, whose "spines" were so assertive as to force even the wild animals to give such places a wide berth. Then would be met nine little 1-in-4 climbs, succeeded by stretches of feet-deep mud. Out of the quagmire a sandstorm would be encountered and the car so absolutely snowed up that she had to be dug out of the grit. The next incident, probably, would be the sinking of the car up to the clutch shaft in a desert bog. On the whole, it may be said with confidence that the ground covered could not have been more difficult to traverse, and the fact that the first of France's automobile machine guns was able to get up to and account for a number of the mobile Arabs has proved beyond all cavil its claim to recognition as a practicable unit of effective fighting strength.

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FIFTY MILLIONS ASKED FOR ROADS

National Grange Gets Important Bill Before Congress—Plan for Highway Improvements in Every State.

Firty millions of dollars for the construction and maintenance of a national system of roads is the amount of assistance the farmers have asked of Congress, not for the benefit of any specified sections, nor in the interest of any special class, but for every section and for every class. Other efforts have been made in the past to secure the creation of some national commission under which the highway systems of the various States might be made productive of better results than thus far have been obtained, but they failed to command the support of the farmers, the largest class to whom the problem of good roads should appeal; and lacking this the bills introduced in Congress were suffered to die, in some cases because they were so worded as to give the impression that they were in behalf of some favored few.

Now, however, the farmers have taken the initiative, and the immense project for improved highways involved in a bill just introduced in Congress, has been formulated through careful discussion in the National Grange, the representative organization of the farmers, which, with more than a million members, is a power that may be relied upon to sway congressional opinion in a large degree. Especially is this the case in view of the fact that the farmer element has, in dealing with the matter, put itself in touch with all other interests to which the problem appeals, and through the active propagandism of such men as N. J. Batchelder, a former Governor of New Hampshire, has practically enlisted the sympathy and assured the co-operation of many other organizations throughout the country, representative of every class of people making use of the roads. The bill which the National Grange has succeeded in placing before Congress will, if passed, inaugurate at an early date a broad and comprehensive policy of road improvement that will affect every portion of the United States. The full text of the bill is as follows:

A bill to provide for the creation of a National Highway Commission, and for the construction, improvement, and maintenance of public highways.

Section 1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That this Act shall include within its provisions any and all public highways within the territory of the United States which, in the judgment of the Commission hereinafter created and constituted, might be constructed, improved, or maintained to promote interstate commerce and trade and the postal service of the United States.

Sec. 2. That a Commission is hereby created to be called the "National Highway Commission," to consist of three Commissioners. The President of the Unted States shall, by and with the advice and consent of the Senate, appoint three Commissioners, who shall have a practical knowledge of road building and construction. Any vacancy which may occur in the Commission shall in like manner be filled by the President; and he shall designate one of the Commissioners to be president of the Commission. Each of the Commissioners appointed shall receive as pay and compensation for his services five thousand dollars per annum. The Commissioners shall remain in office subject to removal by the President for inefficiency, neglect of duty, or malfeasance in office.

Sec. 3. That it shall be the duty of said Commission to take into consideration, formulate, and adopt such plan or plans for the improvement, construction, and maintenance of such public highways, the improvement, construction, and maintenance of which shall, in the judgment of the Commission, acting in co-operation and consultation as far as possible with the duly constituted authorities having charge of the construction and improvement of the public highways of the several States, promote and facilitate interstate commerce and trade and the postal service. The said Commission may, prior to the completion of all plans and surveys contemplated by this Act, proceed to such immediate work as in the judgment of said Commission may constitute a part of the general system of works herein contemplated.

Sec. 4. That it shall be the duty of said Commission to superintend and direct such works as are herein contemplated, and to carry into full execution such plan or plans for the construction, maintenance, and improvement of public highways as may be devised and adopted by the Commission as herein contemplated, and to make such additional surveys and investigations and mature such additional plan or plans and to carry the same into full execution as may be deemed necessary to construct, improve, and maintain a system of public highways, advantageous for the purposes of interstate commerce and trade and the postal service, and to accomplish the object of this Act.

Sec. 5. That the Commission herein constituted and appointed may cause proceedings to be instituted in the name of the United States in any court having jurisdiction of such proceedings for the acquirement by condemnation of any land, right of way, or material needed to enable it to maintain, operate, and prosecute works for the construction, maintenance, and improvement of public highways, for which provision has been made herein, and to construct, improve, and maintain such public highways. Such proceedings to be prosecuted in accordance with the laws relating to suits for the condemnation of property for a public purpose of the States wherein the proceedings may be instituted: Provided, however, That when the owner of such land, right of way, or material shall fix a price for the same, which in the opinion of the Commission shall be reasonable, the said Commission may purchase the same without further delay; And provided further, That the said Commission is hereby authorized to accept donations of land, rights of way, or material required for the maintenance and prosecution of such work.

Sec. 6. That there is hereby appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, for the purpose of carrying out the provisions and objects of this Act the sum of fifty million dollars. The sum of not less than five hundred thousand dollars out of such appropriation shall be expended in each State of the United States, said sum of five hundred thousand dollars to be expended in each State at the rate of not less than one hundred thousand dollars a year. The said appropriation of fifty million dollars to be available at the rate of ten million dollars a year during the years nineteen hundred and eight, nineteen hundred and nine, nineteen hundred and ten, nineteen hundred and eleven, and nineteen hundred and twelve. If any of the appropriation herein made is not expended in the year named that portion not expended shall become available in the succeeding year or until expended.

Sec. 7. That the Commission herein created and constituted shall superintend, control, and expend for the purpose of this act all appropriations herein made, or which hereafter may be made for said purposes, or so much thereof as shall be necessary, and shall prepare and submit through the president of the Commission, to be by him transmitted to Congress at the beginning of the regular session in December of each year, a full and detailed report of all its proceedings and actions and of all such plans and systems of work as may be devised, in progress, or carried out by it, and of all such additional plans and systems of work as may be devised, matured, and adopted by it, with full detailed estimates of the cost thereof, and a statement of all expenditures made by it; and the Secretary of War may detail from the corps of engineers, or other corps of the Army, an officer or officers to aid them in their work, who shall serve without additional compensation to that now allowed by law; and all moneys hereby or hereafter appropriated shall be expended under the direction of the Commission in accordance with the plans, specifications, and recommendations formulated, matured, and adopted in accordance with the provisions of this Act.

City's Defense in Damage Suit.

Whether the city of New York can be mulcted for damages when any one is injured accidentally by officials engaged in the discharge of their duties is a question that will be determined in the disposal of a pending suit. Henry W. Scheeler has sued for $20,000 damages, on account of the death of his wife, which resulted, it is alleged, from injuries inflicted by a Health Department automobile on December 6, 1906. The Corporation Counsel, in defense of the city, will allege that the Health Department is clothed with the authority of the State, and that the city cannot be held to financial account for the results of accidents attending the performance of public duty.

Commercial Cars and Accidents.

In reckoning the number of accidents caused by automobiles it is not customary to distinguish between commercial and pleasure vehicles. For machines of the former type, the rate would naturally be expected to be very low. In Prussia, where this question has been taken up for the first time, so far as is known, returns covering the first half of the year 1907 showed that less than 1 per cent. of all automobile accidents were attributable to the agency of commercial vehicles. The motor vehicle registrations at that time showed about 25,000 passenger vehicles as against 1,112 freight machines.

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The Week's Patents.

876,974. Piston. Harry A. Knox, Springfield, Mass. Filed Sept. 20, 1907. Serial No. 393,764.

1. A piston having a plurality of channels ond the head end thereof and extending inwards from the periphery thereof, the channels being arranged to register with the inlet ports at the end of the piston stroke.

876,978. Automobile Axle. Albert J. Lehman, Columbus, Ohio. Filed Sept. 27, 1907. Serial No. 394,788.

1. In an axle, the combination of the two tubes placed axially in line with each other, said tubes having gears affixed thereto at their inner or adjacent ends and stud shafts secured projectingly in their outer ends for the reception of the vehicle wheels, a bar loosely inclosed within the inner portion of said tubes adapted to hold said tubes in line and brace the axle from flexing at the middle, said bar provided with a spider, a gear on said spider to mesh with the said gears on the tube, and means whereby said spider may be driven.

877,083. Dust Shield for Self Moving Road Vehicles. John C. B. Ingleby, Leeds, England. Filed June 10, 1907. Serial No. 378,322.

1. A self moving road vehicle, provided with a dust screen consisting of a frame and a covering of fabric which is suspended below the bottom of said vehicle and serves to cut off the air between said screen and the ground from the air between said screen and the bottom of the vehicle body, substantially as and for the purpose set forth.

877,130. Igniter. George J. Schultz, New York, N. Y., assignor to Benjamin Briscoe, Tarrytown, N. Y. Filed Jan. 24, 1907. Serial No. 353,770.

1. The combination with a casing in the form of a bushing for entering into an ignition chamber, a sparking point, a body of insulating material carrying said sparking point and of smaller radius than the radius of the inner wall of the casing, a plate of translucent material carried by said insulating material, and means for clamping said plate against the casing for affording a translucent closure for the space between the insulation and the casing.

877,136. Carburetter. Alfred C. Stewart, Los Angeles, Cal. Filed March 7, 1906. Serial No. 304,651.

1. A carburetter comprising an inner oil chamber provided with an inlet valve, a casing surrounding the oil chamber, an air inlet to said casing and provided with a valve seat, said oil chamber being provided with an outlet opening, a deflector above said outlet, and a valve surrounding the oil chamber and guided to move vertically in the casing and forming therewith and with the oil chamber an air inlet chamber and a mixing chamber, said valve having a portion co-operating with said valve seat and a deflector portion co-operating with the aforesaid deflector, to vary the size of the air inlet opening into the mixing chamber, and the outlet from the mixing chamber in correspondence.

877,175. Speed Indicating Apparatus. Sylvester C. De Fore, Kansas City, Mo., assignor to Standard Speedometer Company, a Corporation of Missouri. Filed Nov. 30, 1906. Serial No. 345,606.

1. In a speed indicating apparatus, the

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FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets or the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

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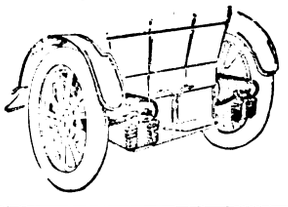
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combination with an indicating device, of a governor mechanism comprising a pair of jointed arms carrying weights, a base connecting the arms of said mechanism at one end, and having a recess in its inner surface, a shaft rigidly mounted at one end and having its loose end seated in said recess, a grooved collar carried by said shaft, and adapted for longitudinal but not for rotary movement, an arm connecting the other ends of said governor arms and adapted for revolution in the groove in said collar, a circuit terminal carried by said collar, a second terminal adjacent to and adapted for contact with said first terminal, and means for revolving said governor mechanism.

877,176. Speed Indicating Device. Sylvester C. De Fore, Kansas City, Mo., assignor to Standard Speedometer Company, a Corporation of Missouri. Filed May 11, 1907. Serial No. 373,136.

In a speed indicating device, the combination of a suitable casing provided with a scale, a bell, a raised bracket adjacent to said scale, and having a longitudinal slot therein, a contact head, a set screw extending through said slot, and supporting said head between the bracket and casing, a crank shaft, an indicator arm rigid on said shaft and projecting beneath said bracket, and means for completing a circuit through said indicator arm, and head to energize said bell, for the purpose set forth.

877,217. Wheel Rim Fastener. Ralph L. Morgan, Worcester, Mass. Filed Jan. 12, 1907. Serial No. 351,956.

1. The combination with an inner wheel rim having an elevated bearing surface, of an outer rim bearing near one side on said elevated surface, and a fastening device supporting the other side of the outer rim from the inner rim, said inner rim having means located between the rims and entirely at one side thereof for clamping the fastening device thereto.

877,233. Wheel for Motor Vehicles. George D. Ross, Glasgow, Scotland. Filed Dec. 28, 1906. Serial No. 349,764.

1. A wheel for motor vehicles comprising, in combination, two wheels, one arranged within the other, the inner one being a pneumatic tired wheel while the outer one consists of a wheel or ring having an internal diameter larger than the external diameter of the pneumatic tire of the inner wheel and being free to move relatively with said inner wheel, said plates on the outer wheel and bearings arranged between the inner wheel and said side plates, said bearings being provided with anti-friction metal.

877,234. Acetylene Generator. Samuel W. Rushmore, Plainfield, N. J. Filed May 27, 1905. Serial No. 262,583.

1. In an acetylene gas generator, the combination with a main inclosing case, of a calcium carbid basket unstably supported therein, and means arranged in the case to impart a sudden shock to the basket, said means being operated by the shocks or jars sustained by the generator.

877,260. Pneumatic Tire. Thomas B. Tiefenbacher, New York, N. Y. Filed March 16, 1907. Serial No. 362,679.

1. A pneumatic tire for automobiles and other vehicles, consisting of an air-tube, a covering sheath surrounding the same, a layer of felt interposed between the air tube and the sheath, a covering layer of elastic material, and a tread of felt secured permanently to the outer circumference of said layer.

877,267. Gearing. Robert de Valbreuze, Levallois-Perret, France, assignor to Societe de Constructions de Vehicles Automobiles, Levallois-Perret, France, a Corporation of France. Filed May 31, 1907. Serial No. 376,584.

1. A transmission gear for motor vehicles comprising a casing, a shaft extending therethrough, a square shaft surrounding the driving shaft, a clutch member rotating with the driving shaft, a slidable clutch member mounted upon said square shaft and adapted to frictionally engage the other clutch member, a spring interposed between the shafts and bearing against said slidable clutching member, a counter shaft formed of two sections journaled in and extending through said casing, a differential gear mounted in the casing and connecting the sections of the countershaft together, a pair of gear wheels arranged within the casing and connected with the counter shaft, and a plurality of slidable pinions carried by the square shaft and adapted to engage with said gear wheels.

877,293. Gearing. Lucien Catel, Lyon, France. Filed March 29, 1907. Serial No. 365,275.

The combination of a stationary shaft, an oscillatory shaft connected to each end thereof and forming a continuation of the shaft, an arm connected to each oscillatory shaft, a rod connecting the arms together, a globular toothed wheel on each oscillatory shaft, and a pinion on a fixed axis meshing with each wheel.

877,294. Multiple Cylinder Engine. Frank L. Chase and Bertrand M. Young, Jamestown, N. Y.; said Young assignor to said Chase. Filed May 28, 1904. Serial No. 210,160½.

1. In a multiple cylinder explosive engine, the combination with a crank shaft, of a plurality of pairs of aligned cylinders, the cylinders in each pair located on opposite sides of the crank shaft, reciprocating pistons located within said cylinders and operatively connected to the crank shaft, intake valves controlling the admission of motive fluid to the cylinders, exhaust valves unseating inwardly, stems on the exhaust valves projecting to the exterior of the valve casings, a cam shaft journaled adjacent the stems of the exhaust valves, cams on the cam shaft adapted to successively actuate the valve stems and unseat the exhaust valves, a longitudinal shaft extending at right angles to the cam shafts, beveled gears connecting the corresponding ends of the cam shafts to the ends of the longitudinal shaft, meshed spiral gears on said longitudinal shaft and the crank shaft, and means for adjusting said spiral gears to properly operate the cam shafts when the engine is reversed.

877,377. Starting Device for Explosion Engines with Four Cylinders. Hippolyt Saurer, Arbon, Switzerland. Original application filed Oct. 6, 1906. Serial No. 337,707. Divided and this application filed Sept. 14, 1907. Serial No. 392,913.

1. In a four stroke cycle explosion engine with four cylinders, the combination with four spring pressed inlet valves in the four cylinders, of a connection on the four cylinders above said four spring pressed inlet valves and comprising a cylindrical bore in its middle with four openings and four separate channels leading therefrom to the spring pressed inlet valves, and a rotary tubular distributing valve mounted to turn in the cylindrical bore of said connection and provided with two apertures and so driven as to make one revolution on every two revolutions of the crank shaft, said connection being provided with two passages for each connecting two of the four channels.

877,405. Friction Clutch. Jules Caillet, Paris, France, assignor to Societe Anonyme des Automobiles Peugeot, Paris, France. Filed Sept. 10, 1907. Serial No. 392,127.

A friction clutch member comprising a clutch cone, semi-circular grooves provided on said cone and lying along elements of the sone surface, hollow india-rubber rods located in said grooves and slightly protruding beyond the circumferential surface of the cone, a leather envelope extended upon the cone surface and upon the protruding portions of the hollow india rubber rods, and small plates fixed to the cone opposite said rods to prevent same from slipping out their housings, substantially as described and for the purpose set forth.

877,437. Clutch. Charles B. King, Detroit, Mich., assignor to Northern Motor Car Company, Detroit, Mich., a Corporation of Michigan. Filed April 3, 1905. Serial No. 253,586.

1. In a clutch mechanism, the combination of a cylinder having one end closed, a flange fixed to the edge of said cylinder around its open end and extending part way to the center, a disc in said cylinder between said flange and the end of said cylinder, means for connecting said disc toward its center with the transmission mechanism, and means for supplying fluid under pressure to said cylinder back of said disc to press it against said flange to bind said disc and flange together for the purpose described.

877,438. Friction Driving Mechanism for Automobiles. John W. Lambert, Anderson, Ind. Filed Dec. 13, 1906, Serial No. 347,601. Renewed Sept. 6, 1907. Serial No. 391,702.

1. A friction driving mechanism comprising a friction disc, a driven friction disc, a rock shaft, means for moving said shaft, means connected to said shaft for bringing the driven disc into engagement with the friction disc, a pair of thrust wheels, means connecting said wheels to the rock-shaft whereby said thrust wheels will be brought into engagement with the friction disc on the opposite side thereof from the driven disc, and a stop device to limit the pressure of the thrust wheels on the friction disc without limiting the pressure of the driven disc on said friction disc.

877,471. Elastic Tire. Mathieu Brun, Lyon, France. Filed Sept. 27, 1906. Serial No. 336,430.

In a tire an elastic member comprising an outer part of elastic material externally smooth and having interior corrugations, an intermediate corrugated metallic resilient part whose corrugations engage those in the outer part, and an inner part of elastic material internally smooth and having exterior corrugations engaging those of the metallic part substantially as described.

877,512. Anti-Slipping Device for Tires. William T. Maxwell, Pittsburg, Pa., assignor of one-half to George W. Eberhardt, Pittsburg, Pa. Filed June 25th, 1906. Serial No. 323,264.

1. An anti-slipping device for tires comprising in combination a series of securing means on the rim arranged alternately on opposite sides and in staggered relation, a chain member connected to each of said securing means and extending outwardly beyond the rim and ending in a hook, and a

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continuous chain extending in zigzag manner over the tire face and having links thereof engaging said several hooks.

877,629. Pneumatic Wheel and Hub. Hamilton A. Brown, Lehigh, Iowa. Filed Nov. 1, 1906. Serial No. 342,150.

1. In an elastic wheel, a solid hub having a continuous concove groove in its periphery and anti-friction rollers on its side faces, a solid circular frame having a continuous concave groove in its inner face, a pneumatic tube between the hub and the circular frame and the hub and the frame connected by circular plates fixed to the side faces of the circular frame and provided with openings for the purpose stated.

877,656. Spark Coil. August R. Luschka, Chicago, Ill., assignor to Motor Specialty Manufacturing Company, Chicago, Ill., a Corporation of South Dakota. Filed Oct. 29, 1906. Serial No. 341,005. Renewed June 22, 1907. Serial No. 380,241.

1. In a spark coil of the type described, the combination of a secondary coil or winding, and a condenser arranged at the low tension or grounded end of said secondary coil.

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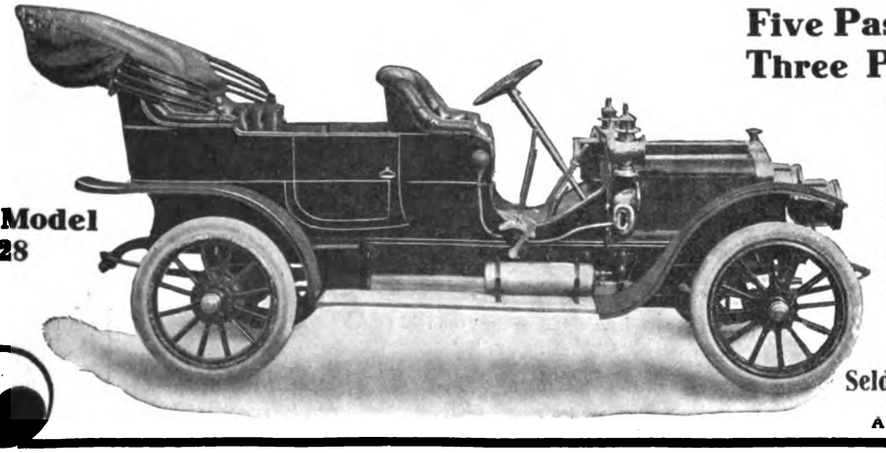
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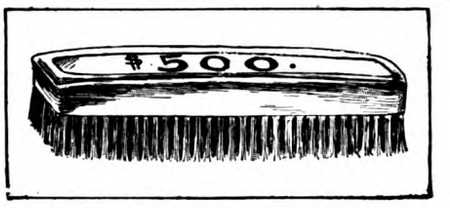
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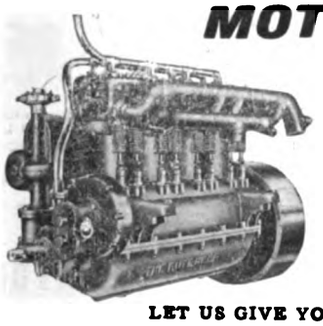
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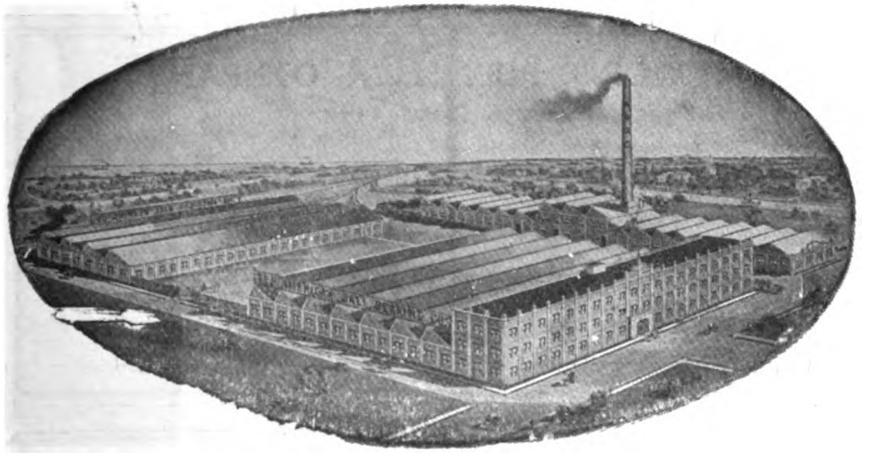
First—On March 3d at Ormond Beach, the 150 miles stock chassis race was won by Bergdoll in an 80 H. P. Benz, equipped with an
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Second—On March 4th, a second victory was scored again by the Benz car at Ormond Beach equipped with the
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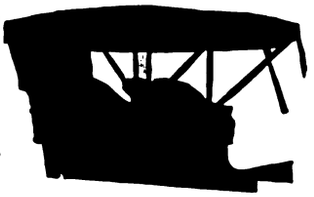
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Nobody ever questioned that if air-cooling will cool it is the ideal method. But the question still comes up "will it cool?" Look into that fairly—

Last August a Franklin Type D automobile ran from Chicago to New York in less than 40 hours, cutting the water-cooled record 18 hours, 50 minutes.

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The 15-day run of a Franklin Type H automobile from San Francisco to New York in August two years ago is also still untouched.

The Franklin D engine ran 7 days without stopping, in a hot Chicago salesroom, and again at Cincinnati it ran 18 days, 3,312 miles, over bad winter roads. In this run the Franklin motor was kept going every minute and only stopped finally when the emergency brake was pulled by mistake.

Finally 5,328 Franklin automobiles are in daily use.

Can anyone doubt that Franklin air-cooling is completely practical?

You gain simplicity. Water-cooling is a complicated system. It increases the liability to trouble. If the water boils there will be over-heating. This can't happen to the Franklin motor. The temperature is more constant and more efficient. It gets more work out of the gasoline. You save the extra weight of water-cooling apparatus. The power is not handicapped. It can do more. And with the Franklin shock-absorbing construction the power can always be comfortably used. The operating expense is light; and you get all the benefit of it.

No other automobile weighing under 2000 pounds will do the work of the Franklin family touring-car Type G which weighs only 1600 pounds.

No automobile but a Franklin will carry people as far in a day and as comfortably as the Franklin 5-passenger Type D; yet it only weighs 2200 pounds. The average 5-passenger automobile weighs a third more.

The 6-cylinder, 7-passenger Type H is the ablest and easiest touring-car in existence, yet it weighs only 2600 pounds—a thousand pounds less than the average 7-passenger automobile.

Doesn't the air-cooling question answer itself?

Write for the catalogue of Franklin models

H. H. FRANKLIN MFG. CO., Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers.

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Ask For What You Want When You Want It

If you were about to buy a house and the agent told you that the method of heating it was optional with you, and that for say $500 you could have steam, hot water or hot air, would you tell him that so long as the price was the same it was immaterial what sort of a plant was installed? Not much! You'd specify. For heating is one of the vital things about a house.

MORGAN & WRIGHT TIRES

represent a similar vital part to an automobile. They probably have as much or more to do with a motorist's pleasure or annoyance as has any other one thing about his car. Then why not make sure of good tire equipment? Why not specify? Once you use Morgan & Wright tires (if only one or two in connection with other tires) for a few thousand miles, you will understand why we urge you to GET THE SPECIFYING HABIT.

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We have in stock all sizes to fit American and foreign cars.

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Have you heard from Florida?

The single cylinder Cadillac driven by Dr. W. N. Slinson won the Jacksonville to Miami endurance run, 371 miles over some of the worst roads in the country, beating its closest competitor by 75 miles.

The other contestants were two and four cylinder cars

A telegraphic report from Palm Beach, Fla., under date of March 15th, and printed in the New York "Tribune" of March 16th, says:

> "Nevertheless the route laid over a course that offered almost every kind of obstacle for a contest of its kind and the highest praise is deserving of the 10 H. P. Cadillac driven by Dr. W. N. Stinson, of Jacksonville, which came in first in the actual running time of 30 hours and 18 minutes."

The New York "Evening Post", under date of March 13th, prints the following telegram from Miami, Fla.:

> "Miami, Fla., March 13.—Dr. William Stinson finished the Florida road race today at noon, **fully seventy-five miles in advance of his nearest competitor.** His official running time for the 371 miles was 37 hours 19 minutes; his actual running time being seven hours shorter. He drove a 10 horsepower Cadillac runabout, which carried three persons."

Cadillac Wins Three Prizes In One Contest

The New York "Globe" says, March 13:

> "Dr. Stinson's Cadillac is in Class B, and wins the Fort Pierce cup, the first prize in this class, also the Palm Beach cup for the car in this class that made the fastest time between Fort Pierce and Palm Beach. The Miami trophy also goes to the Globe car (Cadillac) because it made the best all-round showing on the whole run, irrespective of power."

Cadillac Motor Car Co., Detroit, Mich.

Members Association Licensed Automobile Manufacturers.

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THE CAR FOR SERVICE



Clean Sweep for the White in California Hill Climb

The White Steamer won all three events in which it was entered in the hill-climbing carnival held at San Francisco in connection with the recent automobile show. A 30 H. P. White touring car won the class for cars costing up to $3500, and a 20 H. P. White touring car won in the $2500 class. In the free-for-all, the same 30 H. P. car, with body removed, again triumphed. It made the climb in 1:38⅘, which is 16 seconds faster than that made by its nearest competitor.

The superiority of the White in hill-climbing has been demonstrated in every public contest in which it has competed or, more properly speaking, been allowed to compete. Hill-climbing ability is the true test of real power, of available power, of power at the rear wheels, and it is evident that hill-climbing contests furnish the real demonstration of what the various systems of motive power can do, and that the tables of "rated horse-power" are of purely theoretical interest.

Write for Literature

THE WHITE COMPANY
CLEVELAND, OHIO

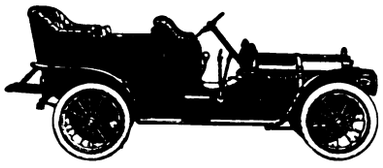
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SPARK PLUGS

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¶It is the newest production of auto grease, and benefitting by the experience of other makers, we have produced the best one yet. ¶We do not imitate any one, nor follow any other maker's plans. Our grease is spongy when made—it is spongy all the time, but it does not melt or run out. ¶It never gets hard or stiff so that it will not do its work properly—no matter how cold the weather is. It is made of the purest and best lubricants to be found, and compounded in such a manner as to produce what the auto user has long wanted. ¶A grease that will lubricate from start to finish, and will last long enough to pay for the trouble of putting it in the machine, and then staying right there like a good clerk attending to its own business constantly, and does not need punching up and renewing every few days, and leaves the machine clean and not all grease when through using it. ¶It is the red thorn in the side of the old fogy grease, or the non-fluid oil makers. It is always RED. No other grease like it, and it is not like any other grease. So we are not imitators in any sense of the word. ¶Buy it, and try it, and if not all we claim for it, any dealer will refund all expense it has been to you.

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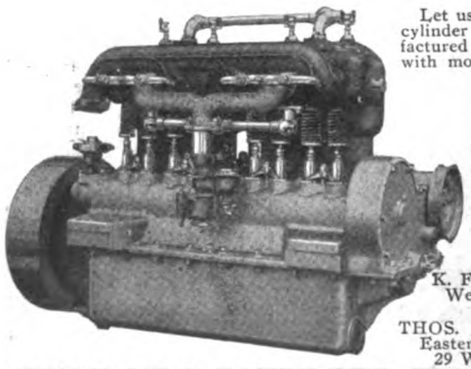
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The "Maxwell"

Car is now and (I promise) ever shall be an honest Car — honestly designed — conscientiously built — truthfully sold and in good faith backed up by its makers after it is in the hands of the buyer.

Times and conditions may change, but principles never do.

Maxwell principles of construction—chief among which are Thermo-syphon cooling; Unit Power Plant with three point suspension; and metal body,—are sound; all have been time-tried and road proven.

Here and there you'll find a maker who has adopted one or more of these Maxwell features, but only in Maxwell Cars do you find a combination of all of them.

I always feel sorry for the maker or sales manager who finds it necessary to contradict year after year all he has said previously, or who must devise new "talking points" to cover up past mistakes. I feel more sorry for the people who are beguiled into buying his cars.

Maxwell advertisements of four years ago expounded the same theories and principles as do those of 1908—and those of next year will be consistent with this. That's only one expression of Maxwell stability—it's one reason why Maxwell owners are such a contented lot.

Our catalog is free.

Benj. Briscoe President.

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Palmer-Singer Six-Sixty 6 Cylinder Runabout, 60 H. P., $2,850.

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Palmer-Singer Four-Forty, Seven Passenger 40 H. P., Touring Car, $4,000.

Palmer-Singer Four-Thirty The "Skimabout" 4-Cyls. 30 H. P. $1,950

Palmer-Singer Town and Country Car, 28-30 H. P., $3000.

You can't use the $6,000 imported town cars for touring—too heavy—not enough power. Our Town and Country Car—open or closed, which and whenever you like—has ample power for any roads, any hills—and is besides the BEST town car money can buy.

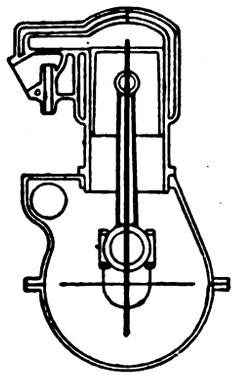
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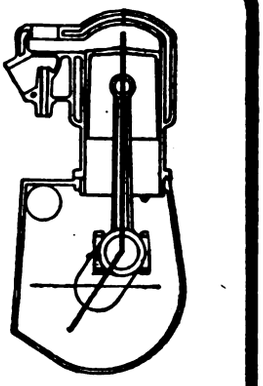
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Crank Shaft on Center

Rambler



Crank Shaft Offset

Why the Offset Crank Shaft

One of the greatest improvemen·s in motor construction is the offset crank shaft. Its advantages are positive and direct.

First—By practically eliminating the dead center the efficiency of the motor is greatly increased through the greater leverage and more direct thrust from piston to crank shaft.

Second—Increased life of the motor through reduction of side thrust on cylinder walls and consequent saving in wear.

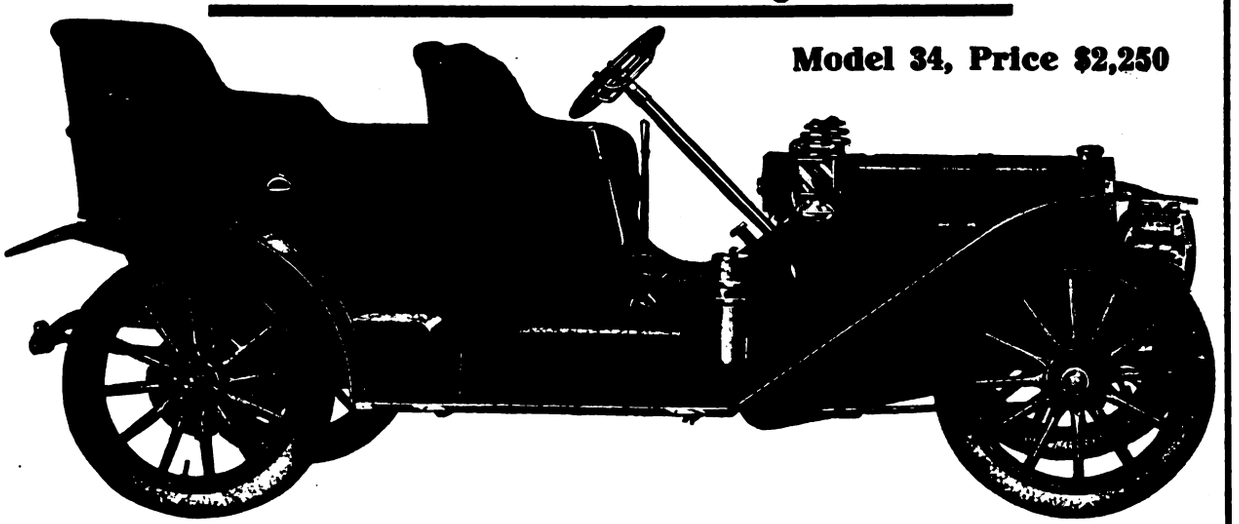
Third—Reduction in vibration and increased steadiness of running through more direct application of power generated in the cylinders.

Like many other fundamentally good features this must be done right and in the Rambler it is right both theoretically and practically and the result is a motor that combines the highest degree of efficieny with long life and economy of operation.

It is this and other features of equal value that make

The Car of Steady Service

Model 34, Price $2,250



This four cylinder chassis, equipped both as a 5-passenger touring car and 3-passenger roadster. Price of each style $2,250. The Rambler Utility Car with double opposed motor, $1,400.

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THE MOTOR WORLD

Volume XVII. New York, U. S. A., Thursday, March 26, 1908. No. 26

WINTON WOULD MAKE DIRECT SALES

Issues a Suggestive Statement, but Leaves His Attitude Toward Agents Open to Considerable Speculation.

Reports are afloat that the Winton Motor Carriage Co. has abandoned the agency system and hereafter will deal direct with purchasers. They undoubtedly grow out of the company's recent announcements advising intending buyers that the surest way to obtain lasting satisfaction is to purchase from the manufacturers themselves, which advice has been printed in the form of advertisements and circular letters, many of which have found their way into Winton agents' territory. That many of the agents are considerably perturbed is not to be denied, but when Manager Churchill of the New York Winton branch was asked whether the announcements indicated that the company had broken away from agencies or whether they presaged a move of the sort, he said he was not in position to make reply.

"I have no information to that effect," he said. "The agents attached to this branch have not been disturbed and have expressed no dissatisfaction. Of course, we think pretty well of the branch house system, but more than that I cannot say. Definite information must be obtained from the factory."

Sales Manager Shanks already had issued a statement bearing on the subject in which while he unequivocally suggests the advantages of "patronizing the maker direct," he does not make plain whether the company has or intends to cut loose from agents. He says:

"A protest against our statements came to us the other day from a prominent dealer in Pittsburg, but, oddly enough, the protest itself rather supported our arguments. For this dealer, proclaiming that he is not among those dealers who frequently shift agencies, added that he had held a specified agency three years. If an agency connection of three years is one of which a dealer may be proud (and it probably is), doesn't that alone serve to show that few agencies continue as long as three years? Any doubt that may exist on this point readily can be dispelled by reference to agency directories covering two or three years. It will be found that not two per cent. of all the dealers in America are handling exactly the same lines now that they were in 1906—two years ago.

"To provide a remedy for this ill, the Winton company owns and operates its own branch houses in ten of America's greatest cities. These branches are devoted exclusively to Winton cars and are not subject to the shifting of agencies. It is the purpose of each branch to give Winton owners thorough and enthusiastic co-operation and satisfaction, not only when the car is new, but so long as the owner retains it, whether that be two years, or ten years, or more. And the buyer is best assured of such treatment when he patronizes the maker direct, for then he knows that the seller's interest and loyalty will be centered upon the same make in future years that it is to-day."

Hercules Tied up by an Injunction.

The Hartford Suspension Co., maker of the Truffault-Hartford shock absorbers, has been granted an injunction against the Motor Car Equipment Co., of New York, restraining it from manufacturing, selling or using the Hercules shock absorber, which the equipment company already had ceased to market. The injunction grows out of the suit brought by the Hartford company alleging infringement of its patents, No. 303,589.

White Company Opens Pittsburg Branch.

On April 1st, the White company will open a branch office in Pittsburg, having secured the new and commodious garage at 138-148 Beatty street, formerly occupied by the Liberty Automobile Co. William B. Yoder will be in charge of the branch; his territory will include the western counties of Pennsylvania.

POPE RECEIVERS ATTACKED ANEW

Toledo Interests File Second Petition for Their Removal—Both Cases to be Heard To-morrow.

Petitions inspired by the Toledo interests unfriendly to Albert L. Pope, and which seek to have him removed as receiver of the Pope Motor Car Co., are becoming so numerous that it soon will be difficult to keep count of them. In addition to the petitions to that end filed in the United States Circuit Court at Toledo last month, and in the United States court at Indianapolis only two weeks ago, a second petition was lodged with the court at Toledo on Friday last, 13th inst. The ostensible petitioners in the latter instance are the Northern National Bank of Toledo, the National Bank of Commerce and the Bostwick-Braun Co., of Toledo, and the Capital National Bank of Indianapolis, but the same attorney is the moving spirit in both cases. Judge Taylor set to-morrow, Friday, March 27th, as the time for a hearing on both motions. Receivers Pope and Yule and their attorneys are in Toledo and it is probable that the matter will be threshed to a finish. The day before the second Toledo petition was lodged, Albert L. Pope filed a claim for $787,987.84 against the Pope Motor Car Co. and Judge Taylor appointed Irvin Belford a commissioner to investigate its validity.

The petitioners allege that they are creditors of the Pope Motor Car Co. in the sum of $240,000, and that Receivers Pope and Yule are endeavoring to smother their claims by presenting a claim of the Pope Manufacturing Co., the parent company, of Hartford, Conn., for $800,000, in which both receivers, it is charged, are personally interested.

It is charged in the petition that the $800,000 claim is irregular. In support of the allegation there is presented a statement of the Toledo concern's earnings for four years

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from July 31, 1903, to July 31, 1907, which were $1,904,000. This sum was increased by $360,000 earnings from the Indianapolis plant, which is a part of the Pope Motor Car Co. In view of such earnings, the petitioners assert, no claim of $800,000 could be made legally by the Pope Mfg. Co.

That A. L. Pope, together with his father, A. A. Pope, own more than a majority of the stock of the Pope Mfg. Co., on whose books is held the stock of the Toledo concern, is also set forth in the petition. For this reason the creditors demand the removal of the present receivers and the appointment of disinterested persons, although as a matter of fact, it is well known that the men behind the scenes are bent only on securing Pope's scalp; they have no real objection to Yule.

As in the first petition, it is also charged in the one filed on Friday last, that the creditors of the Toledo plant were denied a voice in the selection of receivers and that instances of partial administration justify their petition for new directors of the affairs of the Toledo plant.

The Week's Incorporations.

Wilmington, Del.—J. R. Richardson Auto Co., of Wilmington, under Delaware laws, with $50,000 capital. Corporators not named.

Philadelphia, Pa.—Auburn Motor Car Co., under Delaware laws, with $10,000 capital. Corporators not named.

Seattle, Wash—Sound Motor Co., under Washington laws, with $8,000 capital. Corporators—Walter M. French, E. P. Frin, S. S. Munk.

Binghamton, N. Y.—H. B. Doherty Co., The, under New York laws, with $5,000 capital; to manufacture motors. Corporators not named.

Chicago, Ill.—Pietsch Auto & Marine Co., under Illinois laws, with $30,000 capital; to manufacture and deal in machinery. Corporators—L. W. Pietsch, O. E. Pietsch, C. J. Ward.

Jersey City. N. J.—Maxwell-Briscoe Export Co., The, under New Jersey laws, with $50,000 capital; to manufacture motor vehicles. Corporators—Benjamin Briscoe, J. R. Turner, R. Irwin.

Fort Wayne, Ind.—Black Mfg. Co., The, under Indiana laws, with $10,000 capital; to manufacture and sell automobiles and parts of automobiles. Corporators—Marion Black, A. L. Randall, Edward White, Donald Hayden.

New York City, N. Y.—Radio Battery Co., under New York laws, with $100,000 capital, to manufacture and install batteries, storage batteries, etc. Corporators—R. B. Respess, H. L. Robinson, J. W. Kinne, New York City, N. Y.

Newark, N. J.—Automobile Co. of New Jersey, under New Jersey laws, with $25,000 capital; to engage in the hire and sale of automobiles. Corporators—William V. Morgan and Silas Weston, Montclair, N. J.; Stanford Rogers, Glen Ridge, N. J.

In the Retail World.

E. H. McGibbon has had plans drawn for a large garage to be erected at Venice, Cal. It will be a two-story structure and will cost $7,000.

James A. Quinn, of New York City, has set his bait for the seashore tire trade. He has rented for a term of three years the store at 77 Brighton avenue, West End, N. J., and will open on April 1st.

With G. L. Nickerson, J. S. Brown, and C. W. Sprague as its composition, the Nickerson Automobile Exchange has opened at 309 Fourteenth street, Washington, D. C. The firm will deal in second hand cars.

A. D. Perkins, a former dealer of Los Angeles, has returned to that city after conducting a manufacturing business in Portland, Ore., and has opened at 605-7-9 West Seventh street, as the Perkins Automobile Exchange. He will carry on a trade in second hand cars.

Harry J. Beebe and Charles Haigh, of Alpena, Mich., have formed a partnership and will open a garage in that place. They will do a general repair business and carry a large line of sundries, besides having the agency for several cars.

George E. Hume has been appointed receiver for the Boyd Automobile Co., of Indianapolis, on the petition of the Warner Instrument Co., and other creditors. The company claims to have assets of $7,500 and liabilities of a lesser sum.

Cairo—in Illinois, not Egypt—has a new concern, the National Motor & Supply Co., which will handle the Olds motors and supplies. F. L. Harp, long connected with the Three States Implement & Buggy Co., of that city, is head of the new concern.

The New University Garage, at 166-168 St. John street, New Haven, Conn., has been purchased by Gardner E. Wheeler. This garage is unique in that automobiles are stored in separate "stalls," each provided with private lock and key.

The building on Lake street, Cadillac, Mich, formerly occupied by the Cadillac Machine Co., is being rebuilt for a garage. The name of the company has not been decided upon, but it is stated that it will have the agency for several well known cars. Wynter C. Massey will be in charge of the business.

All the machinery in the Redlands Auto Co.'s garage at Redlands, Cal., has been purchased by Robert Leith and J. C. Duncan, owners of the Casa Loma garage at the same place, and the repair business of the former will be transferred to the latter. J. L. Warner was associated with Leith and Duncan in the purchase.

Suit has been brought against P. F. Ryan of Schenectady, N. Y., to recover the proceeds of a car he sold for Mrs. Ada B. Mills of Lansingburgh. Mrs. Mills was to receive $300 in case Ryan disposed of the car, and anything realized above that amount was to be his commission. It is alleged that Ryan disposed of the car in exchange for another car and $300 cash, but has paid nothing to Mrs. Mills as called for by the agreement.

The Columbus Auto Supply Co., with Cincinnati men as its backers, has been formed in Columbus, and has located at 342 South High street. This makes the first exclusive supply store in Columbus. The men interested in the venture are F. A. Cromley, F. P. Schopper, Jr., G. Schwendler, and W. R. Clark. The first named will manage the business.

W. E. Brown, proprietor of the Tippecanoe Automobile Co., Lafayette, Ind., has disposed of his interests to a company composed of Daniel J. Harrington, Edward J. Gallagher, John F. Ruger and Clarence Brown. The new concern will be known as the Lafayette Automobile Co., and will become incorporated under the laws of Indiana, with $10,000 capital stock.

Several changes will be made along Newark's (N. J.) automobile "row" within the next few weeks. J. W. Mason will remove to his new building on Halsey street, near Marshall, and the present location at 289 Halsey will be occupied by a new firm. The F. E. Boland Co., which, by the way, will change its name, Boland having withdrawn from the company, his interests having been acquired by W. H. Weldon, will occupy a new building at Halsey street and Branford place. It will be a one-story structure, 50x60 feet. The Linkroum Automobile Co., which has been located at 17 Bank street, will occupy the building at 239 Halsey street, which will be vacated by the Boland company. Other changes are in prospect.

Conwell Succeeds to Lull's Position.

J. S. Conwell, who for the past year has been general northern representative for the Auto Vehicle Co. of Los Angeles, manufacturers of the Tourist car, has been appointed general manager of the company, with headquarters in Los Angeles. Conwell takes the place made vacant by the death of Lynn C. Lull, who passed away suddenly in Detroit several weeks ago.

To Manufacture a New Transmission.

The Black Mfg. Co., which has incorporated in Indiana with an authorized capital of $10,000, and is located at Fort Wayne, will make a specialty of a transmission mechanism invented by Marion Black, one of the corporators. In addition, the company may manufacture and deal in automobiles and parts.

New Factory for Laman Tops.

The L. L. Laman Auto Top Co., Utica, N. Y., has moved its factory from 75 Lafayette street to the large building at 179 Blandina street. In its new location the company will have more than 30,000 square feet of floor space, considerably more room than was to be had in the old quarters.

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BRISCOE NAMES THE COMMITTEES

Comparatively Few Changes in Personnel of A. M. C. M. A. Management—Smith Again Heads Show Committee.

With comparatively few changes in their makeup, Benjamin Briscoe, chairman of the committee of management of the American Motor Car Manufacturers' Association, has continued all of the committees that served during 1907.

The show committee, which always is an active one, will again have H. O. Smith, president of the Premier Motor Mfg. Co., as its chairman. Associated with him will be S. H. Mora of the Mora Motor Car Co., and R. M. Owen, of the Reo Motor Car Co. The other committees are as follows:

Tours and Races—W. C. Marmon, Nordyke & Marmon Co., chairman; H. O. Smith, Premier Motor Mfg. Co.; A. C. Newby, National Motor Vehicle Co.

Good Roads—Chas. E. Lewis, Jackson Automobile Co., chairman; James Couzens, Ford Motor Co.; R. E. Olds, Reo Motor Car Co.; H. B. Krenning, Dorris Motor Car Co.

Legislation—R. E. Olds, Reo Motor Car Co., chairman; C. G. Stoddard, Dayton Motor Car Co.; A. C. Newby, National Motor Vehicle Co.; R. A. Palmer, Motorcar Co.; R. E. Graham, Acme Motor Car Co.

Membership—W. H. Van Dervoort, Moline Automobile Co., chairman; Morris Grabowsky, Rapid Motor Vehicle Co.; E. K. Burroughs, Abendroth & Root Mfg. Co.

Advertising and Publicity—Barney F. Everitt, Wayne Automobile Co., chairman; Harry Fosdick, Moon Motor Car Co.; G. B. Louderback, Buckeye Mfg. Co.; Theo. P. Bailey, St. Louis Car Co.; Leon Myron Bradley, New York office; Charles E. Duryea, New York office.

Finance—James Couzens, Ford Motor Co., chairman; W. G. Morse, Atlas Motor Car Co.; J. B. Bartholomew, The Bartholomew Co.

Standardization and Technical—John D. Maxwell, Maxwell-Briscoe Motor Co.; Henry Ford, Ford Motor Co.; R. S. Crawford, Crawford Automobile Co.; L. P. Mooers, Moon Motor Car Co.; R. E. Olds, Reo Motor Car Co.

Freight and Transportation—Harry A. Knox, Atlas Motor Car Co., chairman; H. W. Mack, Mack Bros. Motor Car Co.; R. Harry Croninger, Pennsylvania Auto-Motor Co.; J. N. Willys, Overland Auto Co.; G. D. Wilcox, Gearless Transmission Co.; C. C. Hanch, Nordyke & Marmon Co.

Tires—G. V. Rogers, Mitchell Motor Car Co., chairman; James Couzens, Ford Motor Co.; Frank Briscoe, Brush Runabout Co.; O. Stevenson, York Motor Car Co.

Agencies—W. H. Van Dervoort, Moline Automobile Co., chairman; A. R. Welch, Welch Motor Car Co.; H. S. Leyman, De-Luxe Motor Car Co.; Frank L. Pierce, Gaeth Automobile Co.; H. B. Larzelere, Chadwick Engineering Works.

Many Judgments Against Archer & Co.

Three judgments, aggregating $13,742, were entered on Saturday last against Archer & Co., Inc., who formerly did business at 1597 Broadway, New York, in favor of Walter B. Manny, on three notes of the corporation, made on December 27, 1907, payable at the Oriental Bank, which were not paid. The notes were indorsed by Allison M. Archer, president of the company, and the judgments are also against him. The corporation gave up business some time ago. During the past several months the sheriff has received eight executions, aggregating $7,270, against it, but found nothing to levy upon. The corporation was organized about 18 months ago with a capital stock of $10,000, and handled the Hotchkiss car, which agency the Hotchkiss Import Co. recently took over.

Dragon is in the Legal Toils.

On petition of John C. Calhoun, whose claim is for $2,400, money loaned, the Equitable Trust Co. and Samuel C. Myers have been appointed receivers for the Dragon Motor Car Co., Philadelphia, the company assenting to the receivership, but denying insolvency. The J. G. Brill Co., whose former car shops were rented to the Dragon people for a factory, also have made a levy on the company. It appears that even the Dragon Automobile Co., which was the style of the concern before its recent reorganization, had not paid its rent for five mosths.

A. C. A. Opens Supply Store.

The Automobile Club of America has embarked in the supply business, a store having been established on the third floor of the big club house on West Fifty-fourth street, New York, in which a complete stock of tires and accessories will be carried. In the announcement of the opening of the store, members of the club are promised "a large discount from current market prices on all supplies."

Receivers to Continue E. V. Business.

Judge Shumway, sitting in the Superior Court at Hartford, Conn., last week issued an order empowering the receivers, Halsey M. Barrett and Henry W. Nuckols, to continue the business of the Electric Vehicle Co. As compensation for their services, he also authorized the receivers to pay themselves $900 each, on account.

Mansuay Goes from Fisk to White.

Louis M. Mansuay, for the past four years assistant manager of the Fisk Rubber Co.'s New York branch, has resigned that position to take up with the White Co.'s New York store. His change will become effective April 1st.

DURYEA PLANT WAS SOLD TWICE

"Insufficient Funds" Nullifies First Sale and Middleby Then Bids $10,000 Less —Will Operate the Factory.

The real estate and machinery of the bankrupt Duryea Power Co., Reading, Pa., has been sold to Joseph W. Middleby, Jr., for $15,000.

On Tuesday of last week the plant was offered for sale. The bidding was quite spirited between D. Lipman, of New York City, and Mr. Middleby, who is a resident of Malden, Mass. The latter bid up to $25,200, and Mr. Lipman bid to $25,250, the plant being declared sold to him.

When he tendered a check for 10 per cent. of the purchase price, it was ignored at the bank on account of lack of funds, and the trustee again offered the plant for sale on Wednesday morning. Mr. Middleby was the only bidder this time and the trustee declared him the purchaser at his price, $15,000.

Mr. Middleby, it is said, will conduct a new company, and will continue the manufacture of automobiles. Ruring the week 11 automobiles, also several lathes and tools were sold.

The purchasers of the automobiles were as follows: M. M. Thew, New Jersey, $390; Dr. Francis F. Brobst, Reading, $385; Dr. L. H. Moss, Massachusetts, $375; James McClellan, New Jersey, $390; H. W. Limbaugh, Harrisburg, $355; E. L. Sturgis, $350; C. F. Fister, New Jersey, $340; Joseph W. Middleby, Reading, bought four machines for $330, $355, $380 and $250, respectively. The latter is a second class machine.

Charles E. Duryea is preparing to engage in the manufacture of motor buggies. That enduring pioneer long has had unbounded faith in the future of that type of vehicles and proposes to "show his faith by his works."

To Make Buggies in California.

N. M. and Fred Anderson, of Los Angeles, Cal., are making arrangements for the manufacture of motor buggies in that city. They already have built one vehicle, which incorporates several original features, and which was recently put to the test in a long tour through Southern California and Mexico.

Chadwick Completes Move to Pottstown.

The Chadwick Engineering Co. have completed their removal from Philadelphia to Pottstown, Pa. They now are in full possession of the huge new factory which was erected for them at the latter place.

Earl Makes Big Increase of Capital.

The Earl Motor Car Co., Kenosha, Wis., has increased its capital stock to $350,000; previously it was but $25,000.

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"Keep Your Eye On Continentals!"

Continental Tires Win Long Island Endurance Contest!



Frayer-Miller Car, Winner of Contest, Equipped with Continental Tires.

A COMPETITOR'S CLAIMS:

Long Island Endurance Contest

Thirteen of the 21 cars used Diamond casings and tubes. Highest competing make equipped 3 cars. Contest won on Diamonds. Plenty of tire trouble all told but not with Diamond tires.

What the Frayer-Miller Company says:

New York, Feb. 26, 1908.

MR. J. B. COTHRAN,
Continental Caoutchouc Co., 43 Warren St., City.

My Dear Mr. Cothran:—

We wish to congratulate you on the way the Continental Tires (with which our car, the winning Frayer-Miller was equipped in the Long Island Automobile Club's Economy Contest) stood up over the 242 miles of this run, under the worst road conditions, the roads being frozen and having deep ruts in them which invited continual danger to our tires.

Our car carried five heavy passengers and we did not have a puncture or a blow-out, and in fact did not touch our tires during the entire run. We did not even think it necessary to carry an extra shoe.

Wishing you continued success, we beg to remain,

Very truly yours,
FRAYER-MILLER COMPANY,
(Signed by) H. H. Knepper, Manager.

VICTORIES FOR CONTINENTAL TIRES

At Ormond, Florida, in March, "Automobile Club of America Cup"; Winning Car "FIAT," Second Car "CHRISTIE," both on Continental Tires. The leading car continued and made a world's long distance racing record, 300 miles, 233 minutes, 44 seconds, 77 miles an hour.

Also, "Minneapolis International World's Championship Trophy," won by the "FIAT" on Continental Tires; and competitive mile record, standing start; amateur mile record; and the world's middle weight mile record, 35 seconds flat.

CONTINENTAL CAOUTCHOUC COMPANY, J. M. GILBERT, Gen. Mgr., **43 Warren St., NEW YORK**
Representation Everywhere.

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THE MOTOR WORLD

Published Every Thursday by

The Motor World Publishing Company

Joseph Goodman, President. R. G. Betts, Treasurer.
F. W. Roche, Secretary.

154 Nassau Street
NEW YORK, N. Y.

TELEPHONE, 2652 BEEKMAN.

Subscription, Per Annum (Postage Paid) . $2.00
Single Copies (Postage Paid) . . . . 10 Cents
Foreign Subscription $4.00

Invariably in Advance.

Postage Stamps will be accepted in payment for subscriptions, but not for advertisements. Checks, Drafts and Money Orders should be made payable to THE MOTOR WORLD PUBLISHING CO.

General Agents: The American News Co., New York City, and its branches.

☞Change of advertisements is not guaranteed unless copy therefor is in hand on SATURDAY preceding the date of publication.

To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

Cable Address, "MOTORWORLD," NEW YORK.

Entered as second-class matter at the New York Post Office, November, 1900.

NEW YORK, MARCH 26, 1908

Suggestiveness of the Savannah Race.

The marked success of the big stock car race in Savannah is suggestive of many wholesome truths and points to a more wholesome state of sport. The truths are plain enough and strong enough to make it advisable to toll the knell of the so-called racing car, which is but another term for the "freak" car, which is dangerous to man and beast and of no practical earthly use.

The even, consistent performance of the cars in the Savannah race, the fact that all save one, which had met with an undistressing accident, were in the running at the conclusion of the contest, and that the tires gave a good account of themselves, constitute a bright page in the history of the sport, while the crowd in evidence and the interest created is evidence that "freak" cars are not necessary to arouse and attract the public.

Trophies that serve such useful ends and that promote such sport, achieve more real and lasting and far reaching benefits, serve more practical purposes, and teach more practical lessons, and save more lives than all the Vanderbilt cups which may be offered for the encouragement of "freaks."

The A. A. A. should not permit the lesson to go to waste. Now that it is showing a disposition to give heed to its disinterested supporters and well wishers it should go further in the same direction by adopting a limit for competition that would relegate the "freaks" to where they belong—the scrap heap. And having adopted a limit, the A. A. A. should hold fast to it and not do as was done for one of the races at Savannah, i. e., stretch the limit in order to oblige a splendid gentleman whose car was a trifle over the dimensions originally fixed.

The governing motorcycle organization had dared to adopt a limit and to hold unswervingly to it, and the manufacturers forced to keep within that limit, have done so. It has encouraged practical design, has killed the "freak" and saved the manufacturers themselves no small amount of money. What the motorcycle body has done, the A. A. A. should do, and it can do it if it so wills, and is not thrown off its balance by "too much Vanderbilt cup."

Promoting Utilitarian Uses.

What is reckoned one of the most important uses of the small runabout and light touring car, if not its most important use, is the utilitarian service which it performs for the physician and the business man who is in need of frequent and important journeys over comparatively short distances. The needs of the country doctor, are usually cited as typical in this respect, but they are by no means the only instances in which the requirement is imperative, for transportation such as the light and economical motor car is capable of providing. Obviously, it is to the best interest of both manufacturer and dealer to foster and protect this section of the market, which besides being a voluminous and intelligent one, possesses the desirable feature of absolute and consistent stability.

There can be no question that the manufacturers have done a great deal in catering to this branch of the field, nor that they appreciate its importance. It is open to discussion, however, whether the average agent is exerting himself to his utmost to develop all the business that is latent in this quarter. A successful continuance of the exploitation which already has gained such a good footing depends quite as much upon the wise handling of the repair business as upon the booming of new types or new models of old ones. This consideration demands the attention of the dealer most strongly.

It is essential that the man who uses a motor car because he requires its services rather than because he inclines to it as a pastime, be taught to get the most work out of it with the least possible expenditure of time and money. He must be taught how to keep his car in service all the time; how to have it ready to answer the instant's demand, whether by day or night; and how to reduce his expenses to their lowest terms. This principle may tend to reduce the repairman's income from any one customer. The chances are that it will not work out in that way ultimately, however, since customers who are so treated usually continue as customers to the end of all time, and form the best possible advertisement of which a business can boast.

In this connection, it may be a lesson can be learned from the methods of the watchmaker, who invariably has a watch to lend for every reputable watch brought in for repairs. Carried to extremes, such a practice would be ruinous to the automobile repairer. But in the case of men who must have their cars for daily service, it would be profitable for the repairman to have a substitute machine or two, such as always are to be found about almost any garage, and which could be put into service temporarily pending the release of the owner's machine from the shop. All things considered, the cost of such a policy would be comparatively slight, particularly if the wear and tear of the substitute machine were covered by a nominal rental figure. But even reckoned at a moderate cost to the repairman, the return would be sufficiently great, measured in the confidence and security of the customer's patronage, to well repay the small outlay.

Problem of the Commercial Vehicle.

It is difficult to appreciate the importance of the wise and conservative development of the commercial vehicle for handling heavy loads over long hauls. The utility motor vehicle is slower in coming into its own that the pleasure vehicle has been, though not slower, perhaps, than is to its own best interests. Its leisurely development up to this time, has been sufficiently unspectacular to escape the notice of unscrupulous and shyster promoters, so that

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it is largely true, that what has been done for the commercial vehicle, has been done earnestly and with the wise purpose of furthering its ultimate growth to the highest possible degree. Yet uninteresting though the type may be, from the standpoint of present worth in the monetary sense, it offers a field for endeavor and a prospect for future usefulness such, that no thinking man in the industry can afford to overlook its specific properties and the difficulties which block its evolution.

One of the most important phases of the problem, and one which is destined beyond a doubt to become a very large factor in its ultimate success, is that of the road train. Primarily, it may be, the idea in itself is unattractive, because it implies a blocking of the highways with huge, slow-moving vehicles, and because the need for it is not apparent. The absolute necessity of transporting large volumes of freight at low costs, however, coupled with the existing limitations to the increase in carrying capacity of the single vehicle, which are daily becoming more apparent, make the road train the only really plausible solution of the problem. What considerations lead to this conclusion, are set forth in another column. Suffice it to say in this connection, that they are sufficient, and that from the results of actual service, it has been proved already, that the road train is not the unmanageable and unprofitable proposition a casual glance at its properties makes it appear.

Briefly recounted, the advantages of the road train are these: The carrying capacity of the train may be largely proportional to the demand of the paying load, since ordinarily, only as many trailers need be used, as are required for the load; the service is more economical in its nature because of the possibility in many cases of working the tractor on practically full time, doubling or trebling the number of trailers, and providing for simultaneous loading and hauling of the full equipment; more economical maintenance, since the disability of one or more trailers need not lay up the entire system; better road service, since the traction is distributed over the whole train—in the more advanced systems—so that a slough of greater length than the train is required in order to mire it; the practical elimination of skidding for the same reason; reduced wear on the road and reduced wheel and driving gear wear, by virtue of load and traction distribution; and the mechanical economy which comes with the concentration of the power plant in the largest possible units.

There are many ways in which regular service for road trains might be established with profit, where the use of individual motor vehicles could not be made to pay. The principle involved is merely that of handling the load on a wholesale basis, and on a large scale, instead of on the retail plan. The man with only enough business to support one truck is not always able to run that on a paying basis, because he cannot afford sufficient "plant" to reduce his maintenance cost. The man or group of men, with sufficient business to support a half dozen trucks, or, what is the same thing, one efficient tractor and four or five trailers, can well afford to pay for the expert attendance, surplus equipment for substitute service, a small repair shop, and repairs.

The profits from railroading are greatest, generally speaking, where the greatest volume of business is handled. Even without actual knowledge in the matter, it would be safe to assume that commercial motor haulage would yield returns somewhat on the same plan. That the bulk of railroad earnings come from freight transportation, suggests an extension of the parallel which is too obvious to be overlooked.

Inconsistency of Frelinghuysen.

Why do not the New Jerseymen who are waging war on Frelinghuysenism touch the author of the jug handled justice, which is implied by that term, on the spot where he is weakest? Senator Frelinghuysen is not a resident of New Jersey. His office and his home both are in New York and long have been. In other words, and in political parlance, Frelinghuysen is, from the New Jersey standpoint, a carpetbagger. As he thus is a non-resident lawmaker, the Jerseymen have additional cause for offense, while New Yorkers also have reason for increased objection that one of their own number should, for political effect, force them to pay tribute to New Jersey while he is free to use their roads without let, hindrance or cost. The wise warriors always seek out the weakest point of their opponents and keep hammering at it. The keynote for the campaign against Frelinghuysenism is plain.

Encouraging the Private Owner.

Suggested in a jocular vein, it is stated that the New Jersey Automobile and Motor Club has given an earnest turn to the suggestion and probably will conduct an endurance contest for private owners only. It is to be hoped that the club will do that very thing. It is to be hoped that every other club promoting a road contest will do likewise, at least to the extent of including a class for private owners in each event. There should be a class of the sort in the Glidden tour. The private owner can be made to give an enduring complexion to such sport—can be made to make it smack more of sport and less of the "trade game." Automobile competition has been so thoroughly saturated with business interests that it is almost waterlogged from the standpoint of sport. No effort has been made to encourage the private owner. It now may prove too late, but on the principle that it is better late than never, it is well worth trying. Up to the present time, the owner has been wet-blanketed.

COMING EVENTS

March 15-April 1, Omaha, Neb.—Omaha Automobile Dealers' Association's annual show in the Auditorium.

March 23-28, Indianapolis, Ind.—Indianapolis Automobile Dealers' Association's show week.

March 31-April 4, Salt Lake City, Utah—Automobile show in Auditorium skating rink.

April 4-11, Pittsburg, Pa.—Pittsburg Automobile Dealers' Association's annual show in Duquesne Garden.

April 6, 7 and 8, Denver, Col.—Annual show in Mammoth skating rink.

April 6-11, New York City—New York Automobile Trade Association's carnival week.

April 11, San Francisco—California Automobile Dealers' Association's hill climb.

April 16-18, Memphis, Tenn.—Automobile show promoted by the Automobile Dealers' Association of Memphis, in the Auditorium.

April 24, Westchester county, N. Y.—Stock chassis race for Briarcliff trophy.

April 28, Norristown, Pa.—Norristown Automobile Club's endurance run to Lancaster, Reading and return.

May 5-6, Harrisburg, Pa.—Motor Club of Harrisburg's second annual endurance run.

May 16, Hartford, Conn.—Hartford Automobile Club's 200-miles endurance run.

May 30, Bridgeport, Conn.—Automobile Club of Bridgeport's third annual hill climb.

May 30, San Francisco—California Automobile Dealers' Association's endurance contest.

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FRELINGHUYSEN TO CUT THE FEE

New Jersey Senator Abandons His High Tariff — Evidence that He is a "Carpet-bagger."

Senator Frelinghuysen has "come down." As a result of an informal discussion with other New Jersey senators he has advised W. C. Crosby, chairman of the New Jersey Automobile and Motor Club's legislative committee, that "the feeling is that the license fee should be raised to $3 for cars under 10 horsepower, $5 for from 10 to 30 horsepower, and $10 for any above that figure, and the drivers' fee should be raised to $2 and $4, no tourist privilege, the manufacturers' one to five cars at $5 per annum."

"In his new bill Frelinghuysen sought to raise the registration fees on a sliding scale —$3 for cars of 10 horsepower or less, $5 for cars of 20 horsepower or less, and upjumps of $5 for each additional 10 horsepower. At present the fees are $3 for less than 30 horsepower, and $5 for cars of greater power. Frelinghuysen also outlined an increase in the cost of drivers' licenses from $1 and $2, respectively, up to $25. He also proposed to abolish the blanket license for manufacturers and dealers which costs $20. The extent of his "come down" is therefore of considerable magnitude. Mr. Crosby states, however, that the New Jersey automobilists are not satisfied. If any increase whatever is to be made, he thinks an increase of the speed limit or privileges to tourists or non-residents should be accorded in return.

Senator Frelinghuysen's letter to Mr. Crosby advising him of the "feeling" of his fellow senators supplies an interesting sidelight on the manner in which even New Jersey legislators transact their State affairs in New York—and without paying a fee for the privilege. Like Frelinghuysen, Crosby earns his living in New York City. Crosby, however, actually has a home in New Jersey, while the New York telephone directory gives the residential address of Joseph S. Frelinghuysen as 35 West Sixty-eighth street. Inquiry discloses that it is the home of Senator Joseph S. Frelinghuysen—of New Jersey—the same who framed the existing law and who so stoutly insisted and insists that non-residents chiefly New Yorkers, pay an "admission fee' to enter New Jersey. Incidentally New Jerseymen, are accorded non-resident privileges in New York.' For political purposes, Frelinghuysen has a letterhead which bears "Raritan, N. J." as his address. His letter to Mr. Crosby ostensibly was written and dated from that point, but for once the crafty senator missed his cue. The letter was addressed to Crosby at "755 Water street, City." If anyone asked for Water street in Raritan, N. J., he probably would cause the oldest inhabitant to scratch his head until he was freed of even suspicion of hayseed. For Water street is in New York City.

In political circles the man who resides in one State and holds political office in another State is termed a "carpet-bagger."

Asks Congress for Motor Volunteers.

The Automobile Club of Maryland is anxious not only that its own State but the Federal government recognize the automobile as an instrument for fight as already it is generally recognized as a vehicle for frolic. To that end Delegate Carr has introduced a joint recolution in the Maryland legislature calling upon Congress of the United States to adopt measures for the promotion of the use of automobiles in warfare. It was referred to the committee on Federal Relations. Later Mr. Carr offered a bill designed to permit the organization of a volunteer motor corps as a part of the State militia. In pursuance of the plan Representative Talbot of Maryland, on Monday last, offered in the House the petition from the Automobile Club of Maryland for the passage of an act by Congress creating a body to be known as "the volunteer motor corps" throughout the country as part of the regularly organized militia of the several States.

Canadian Compounds a Queer Bill.

If the bill just introduced into the Canadian parliament by Mr. Bowman should by any chance become a law, the use of automobiles will become a delightful pastime. The measure provides that no motor vehicle shall be allowed to run or stand upon any public highway in any municipality, excepting in a city, between 7 in the morning and 9 o'clock in the evening of Saturdays, and between 7 in the morning and 3 in the afternoon of Sundays. It also seeks to require that persons having control of motor vehicles when meeting a horse outside city or town limits are to stop at least 100 yards distant, and shall not proceed or allow the motor to operate until the horse or horses are safely passed.

Three More Clubs in New York.

The Peekskill Automobile Club and the Automobile Club of Ulster Co. have joined the New York State Automobile Association, making 43 clubs now on the roll. The Automobile Club of Mount Vernon, which was organized on Thursday last with William Adams as president, and F. A. Kately, secretary, also will affiliate with the A. A. A. State organization.

Can't Bar Child Drivers in Florida.

Judge Call, sitting in the Circuit Court of Florida, has declared "unreasonable and void" that part of the Jacksonville ordinance which prohibited children under 16 years from driving automobiles. The point was raised on an appeal in the case of Jack McMillan, who was convicted in a lower court.

STANDING START FOR HILL CLIMB

Plans Revised for the Fort George Contest of Carnival Week—Eleven Events on the Schedule.

Following a meeting of the hill climbing committee, Colonel K. C. Pardee, the chairman, announced a rearrangement of the classification and conditions of the Fort George hill climb to be held in conjunction with the New York Automobile Trade Carnival during the week of April 6. The climb will take place on Thursday afternoon, April 9th.

The contest will be open to stock cars under the price classification schedule of the A. A. A., and for the first time the climb will be from a standing start, in order to eliminate any possible chance of an accident such as took place at the last climb, when a car struck the subway pillar which occupies a part of the roadway near the foot of the grade and leaves but a narrow opening.

Blanks can be obtained from and entries will close with Colonel K. C. Pardee, No. 317 West Fifty-ninth street, on Monday April 6. The entry fee in each event will be $10, or for non-subscribers to the carnival fund, $110. Following is a list of the events:

1. Gasolene cars selling for $850 or less. 2. Gasolene cars selling from $850 to and including $1,250. 3. Gasolene cars selling from $1,251 to and including $2,000. 4. All gasolene cars selling from $2,000 to and including $3,000. 5. Either steam, gasolene or electric cars selling from $2,001 to $3,000. 6. Gasolene cars selling from $3,001 to and including $4,000. 7. Gasolene four-cylinder cars selling for over $4,000. 8. Six-cylinder cars, selling for over $4,000. 9. Free-for-all, cars of all motive power. 10. Steam cars only. 11. Electrics of all types.

Native Cubans Try Road Racing.

Native Cubans, negroes and resident Havanians witnessed some exciting races at the Cuban capital on Thursday last, 19th inst. The race for runabouts from 25 to 50 horsepower, was won by Aspuro, who drove a Winton over the course, 2,610 metres (1. 2 miles) in 2:11⅗. Damasco Laine finished first in the event for cars under 25 horsepower, his time being 2:33, while Mario Carvajal was the victor in the class for cars up to 50 horsepower. Time, 2:00⅗. Honore Laine finished first in the class for touring cars between 25 and 50 horsepower, his time being 2:21. Antony Colas won a similar event for professionals in 2:15. The Havana cup was won by Alfara and the Lucha award was won by de Bustamante, who made the best time over the kilometre. Each competing car was fully equipped and carried its full complement of passengers. The events aroused considerable interest.

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Scenes and Incidents of the Savannah Stock Car Race

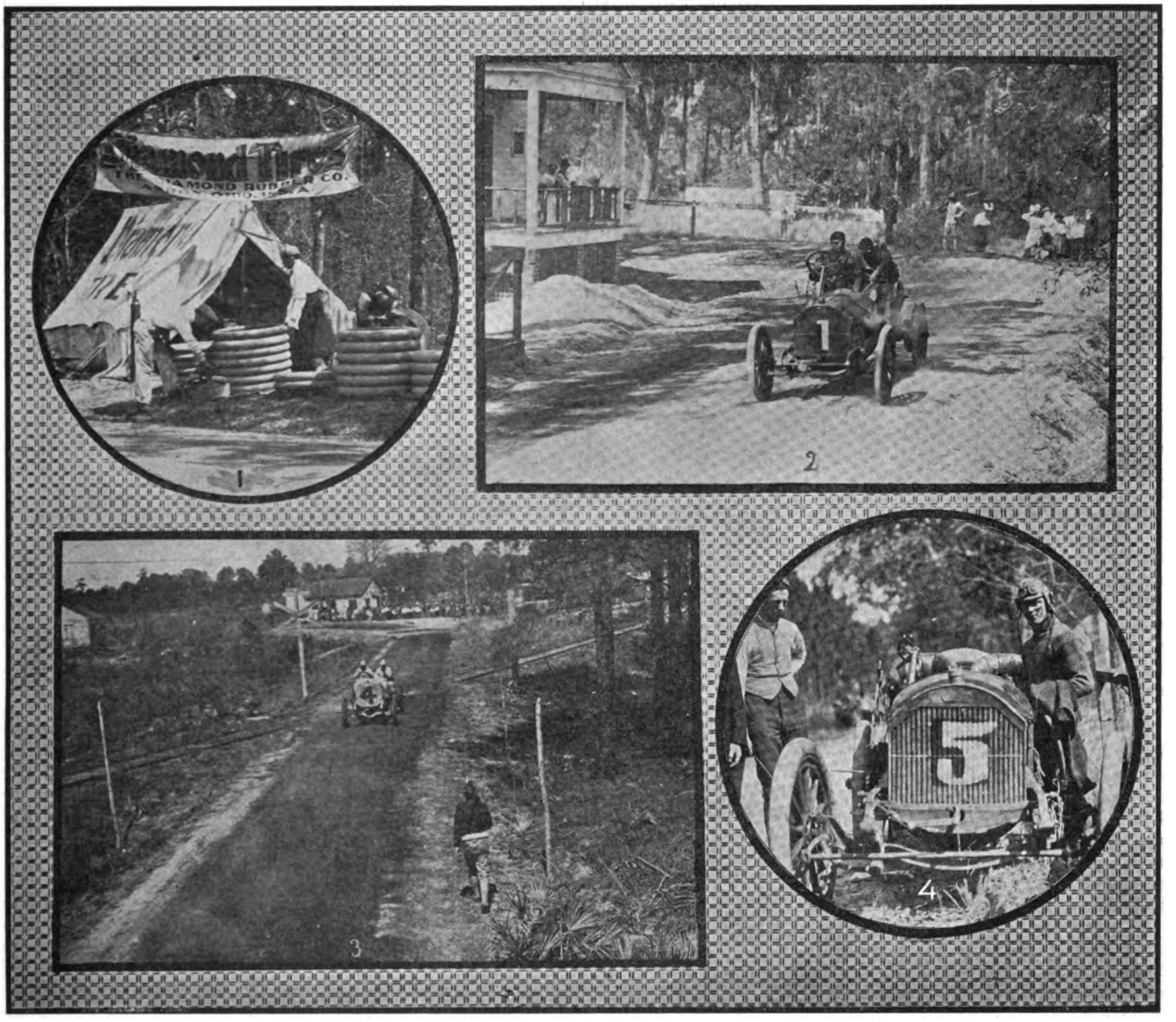


1. THE GRANDSTAND. 2. LYTLE PUNCTURED. 3. DITTO POOLE. 4. STRANG ACCLAIMED THE VICTOR.

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SAVANNAH SETS NEW STANDARD FOR SPORT

Big Race For Stock Cars Proves That Freaks Are Not Necessary For Success—Strang Scores a Notable Victory But Consistent Performance Is The Rule—Governor Hoke Smith Presents The Victor—Every Detail Well Executed.



1. ONE OF THE DIAMOND TIRE CAMPS.
2. LYTLE ROUNDING THE ISLE OF HOPE TURN.
3. GUARDING THE COURSE.
4. McCULLOGH AFTER BEING DITCHED.

The balance turned at Savannah, Ga., on Thursday last, 19th inst., the second day of the two days' road race carnival for stock cars, under the auspices of the Savannah Automobile Club. The "big" race very much more than redeemed the partial fiascos of the day before.

Despite a disappointing first day, when two 180 miles races were held, in one of which but two cars finished and in the other one car, the second day brought out the first long distance road race for stock chassis held in America, and produced the finest sport ever witnessed in a long distance road race in this country. It was distinctly Vanderbiltian and a little bit more.

In a few seconds more than a quarter of a chronological day Lewis Strang jumped from the minor position of an understudy to the exalted position of one of the best race drivers in the country, by piloting a 50 horsepower Italian Isotta-Fraschini car over 20 laps of the 17.1 miles level oiled course in the fast time of 6 hours 21 minutes 30 seconds. Strang has for several years been a mechanic for and once-in-a-great-while substitute for Walter Christie. The total distance was 342 miles, making his speed average 53.83 miles an hour.

A few minutes behind Strang finished Herbert H. Lytle, well known as a Vanberbilt cup race driver, in a 50 horsepower Apperson car. Lytle's time was 6:44:37,

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and Malcolm Newstetter, a hitherto unknown, in a six-cylinder Acme car, finished a close third in 6:47:05. Two minutes after him came H. A. Michener, in a Lozier car, and Al Poole, known as Joe Tracy's mechanic, driving a counterpart of the winning car, was fifth. Poole made the fastest lap of the race, covering the second in 15 minutes 53 seconds, a speed better than a mile a minute. When the race officially was declared over two cars still were in the running—the Stearns, driven by Frank Leland, and the American, piloted by Fred Tone. Only one of the eight cars was put out of the running and that through no fault of its mechanism, but through an error of judgment on the part of the driver who attempted to take a dangerous turn too fast and who overturned in consequence.

The feature of the race was the remarkably consistent performance of all the competing stock cars, and the service given by the tires. The Isotta-Fraschini was fitted with Michelin and the Apperson with Diamond tires, and on neither car was it necessary to replace a tire throughout the race, something unprecedented in long distance events.

The arrangements were perfect and enthusiasm bubbled over in true Southern fashion. While it is impossible to accurately estimate the crowds that saw the race, a fair guess numbers the attendance at 50,000. The crowd was most dense, of course, at the grandstand, where 5,000 persons sat for six hours in a broiling sun, while the parking spaces held automobiles filled with persons in holiday attire. Both sides of the road were lined with spectators, two and three deep, while the Thunderbolt and the Isle of Hope turns held great crowds. Despite the crowds, not an accident happened to one of the spectators, due to the excellent military patrol in command of Major W. B. Stevens. The service of the military organizations, performed willingly without compensation, reflects the whole spirit of Savannah in regard to the meet. Seven hours' patrol duty with loaded rifles was a fatiguing task. The presence of the soldiers and naval reserves had its effect in preserving order and keeping the course clear. Only one incident is recorded where individuals attempted to cross the course in violation of orders from the patrol guards, and after one shot had been fired over the heads of the three men who disregarded the warning, and another bullet ploughed up the sand in front of them, the men quickly halted and were placed under arrest.

The course presented an animated appearance, and the presence of the picturesque Diamond tire camps around the circuit, and the directing banners indicating the turns and angles, gave it the aspect of a Vanderbilt cup course. The city of Savannah was deserted while the race was in progress. Practically all the business houses and even the schools had closed, and the only people left in town were the negro porters and bell boys in the insufficient number of hotels, a few policemen, firemen and street car conductors. Every other Savannahian was somewhere on the course.

Although Georgia is a prohibition State it did not follow that all of the spectators went dry. Most of the hampers carried in the automobiles contained "ginger ale," which is known in Georgia as "prohibition beer," or something stronger, while it is even recorded that several automobiles carried on a thriving trade as itinerant bars. The presence of Governor Hoke Smith, Mayor Tiedeman of Savannah, and other State and municipal dignitaries did not apparently curtail the brisk trade.



ONE OF THE SUPPLY STATIONS

Three hours before the race started the crowd began to fill grandstand, parking places and other points of vantage and when Lytle, in the Apperson, got the word at 10 o'clock, the grandstand occupants rose to their feet and gave him a cheer. Lytle got away without incident and was soon lost to sight up the oiled White Bluff road. Ninety seconds later Strang, in the Italian car, took the signal, and the others got away at the same intervals. Fred Tone, in the American, was third, and Michener, in the gray painted Lozier, which had been dubbed King Cotton, breasted the tape next. Clad entirely in white, while from the tops of their tightly fitting headgear defiantly floated white streamers, Michener and his mecanicien presented a striking picture as they awaited the signal. The "King Cotton" lost several seconds at the tape. William McCullogh, in the ill-fated Apperson was fifth away, and then followed Al Poole, in the other Italian car; Poole was the favorite. Frank Leland, driving the Stearns car, the only machine entered by a Savannahian, was seventh, and Newstetter, the dark horse, in the Acme "six" started last.

The first news received by telephone at the stand came a few minutes after Newstetter left. It was to the effect that the American car had shed a tire on the first turn. Strang passed Lytle on the first lap and led at the end of the first 17.2 miles, covered in 17 minutes 50 seconds, with Lytle second in 18:35. The second round passed with Strang still in the lead and opening a gap on Lytle, while Poole, Strang's team mate, simply burned up the roads and almost overhauled McCullogh, who had left before him. Poole's fast driving in this lap scored for him the fastest lap in the race, the 17.1 miles circuit being covered in 15:53.

It was in the third lap that McCullogh came to grief. He attempted to pass Poole on the sharp left handed turn after leaving the Isle of Hope, and took it too fast. Neither the driver nor Wray, his mechanic, was injured when the car overturned, but the steering wheel was broken, and that put it out of the running, although later a temporary repair was made and the car returned to Savannah under its own power.

Poole had hard luck. After being in the lead for a part of the time and holding second place from the tenth to the fourteenth laps, he was compelled to drop back to fifth position on account of tire and other troubles. Lytle also had some trouble with a broken oil pipe. He dropped from second position to fifth and it was not until after the tenth lap that he got actually in the running again. When he did, Lytle made the most remarkable run of the race. Hard luck spoiled the chances of the American and the Stearns cars early in the race. The former cast a shoe after being in the race less than six minutes. Another followed at the Isle of Hope and a third at the turn into the homestretch in the next round. An oil flooded clutch also added to Tone's discomfiture, while Leland was beset by a series of mishaps. He drove by the stand twice with one tire missing, and in the seventh lap ran through a barbed wire fence. He lost much valuable time each lap in plugging up the leak in the radiator caused by the sharp barbs.

The run of Michener's Lozier for the first eight laps is worthy of note, as it reeled off lap after lap with a maximum variation of only 19 seconds, while two circuits, the third and fourth laps, were made in exactly the same time to the second. The performance was again repeated in the 12th and 13th laps.

HOW THE SAVANNAH R

Pos.	Driver.	Car.	H.P.	Start.	1	2	3	4	5	6
1	Lewis Strang	Isotta-Fraschini	50	2	17:50	17:16	1 :11	18:10	17:40	18:42
2	Herbert Lytle	Apperson	50	1	18:35	18:44	1 :56	28:27	19:33	19:27
3	Malcolm Newstetter	Acme	50	8	19:56	19:18	1 :30	19:39	19:42	21:37
4	H. A. Michener	Lozier	45	4	18:41	18:27	18:32	18:32	18:40	18:36
5	Al. Poole	Isotta-Fraschini	50	6	18:53	15:53	1 :50	18:35	18:49	18:17
	Fred Tone	American	50	3	27:51	19:08	19:16	41:01	29:23	39:13
	Frank Leland	Stearns	60	7	30:03	21:59	2 :27	19:05	22:11	28:17
	William McCullogh	Apperson	50	5	19:52	39:08	*			

* McCullogh overturned at Isle of Hope turn.
† ‡ Leland and Tone were still running when the race officially was declared over. Tone's total ti

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WAS RUN AND WON.

TIME EACH LAP													Total
8	9	10	11	12	13	14	15	16	17	18	19	20	Time.
22:17	18:02	18:02	18:12	18:08	23:31	18:40	19:02	18:40	18:37	22:19	20:57	19:07	6:21:30
19:01	22:53	23:43	19:46	19:04	19:43	18:43	18:42	20:17	18:17	18:23	18:33	18:17	6:44:37
24:33	19:17	22:07	19:23	23:35	19:41	20:19	19:38	21:39	19:30	19:37	19:33	19:22	6:47:05
18:07	19.48	26:31	37:12	19:09	19:09	22:09	18:51	18:45	23:07	22:49	23:53	18:57	6:49:17
18:07	17:39	20:20	19:36	18:32	17:31	26:41	19:34	19:31	42:40	28:00	16:46	17:33	6:58:53
20:52	25:12	34:14	21:09	21:42	26:40	21:20	21:25	†					
47:07	22:23	47:10	22:20	27:02	22:23	22:42	22:51	‡					

r 15 laps was 6:36:30, and Leland's 6:45:24.

Trailed by the Lozier and by his own team mate, Strang began to pull away and kept his lead through the seventh lap, only to drop it to Michener in the next. In the 9th lap, however, Strang made a fast spurt and again regained the lead, which he retained from then until the finish.

At the end of the 10th lap, with the race half over, Strang led Poole by 7 minutes, with Michener three minutes behind. Newstetter was fourth, Lytle fifth and Leland sixth. Tone was last. It was at this point that Lytle began his remarkable run that landed him ultimately in second place. With the exception of the 16th lap not one of the succeeding rounds was covered in more than twenty minutes. Poole had carburetter trouble in the 11th lap. In the 18th lap Strang came up to Poole and seeing him under the machine, slowed up to ask the trouble.

"Never mind me," yelled Poole. "Go on; you've got the race won!"

While Poole dropped back Lytle climbed steadily forward. His heady driving in the closing laps of the race manifested itself to the spectators. In the 15th lap he passed Tone after an exciting brush past the grandstand which brought the crowd to its feet, and a few minutes later overhauled Poole. The crowd in the stands got another thrill in the 17th lap when Lytle passed Poole after a neck and neck dash past the tape.

When it became known that Strang practically had won the race he slowed down in the last three laps. On the last lap he came down the homestretch between two lines of cheers, smiling and with one hand in the air. Lytle followed and was greeted even more tumultuously than was Strang. The most spectacular finish was made by Newstetter in the Acme, when he dashed down the last stretch at a speed of 75 miles an hour, after a great run in which he snatched third place from Michener. After Poole had finished, the race was declared over.

Possibly it was the proudest moment in Lewis Strang's life when, after winning the race and a leg on the $3,000 challenge trophy that went with the victory, Governor Hoke Smith presented him and his mechanic to the grandstand audience. After complimenting the management of the race and commenting upon the great sport the Governor said:

"While it was a foreign car that won this race it had to be driven by an American citizen to win. We appreciate superb machinery, but we place manhood first of all." Strang smiled when the Governor presented him as the "hero of the day," and seemed more pleased when the Governor himself pinned upon his coat a gold medal at the veritable love feast which followed in the evening.

At the shore dinner given by the local club in the evening a lot was said about Savannah's chance for landing the next Vanderbilt cup race, and even Jefferson De Mont Thompson, chairman of the cup commission, who refereed, said that next to his own State (New York) he was in favor of Savannah. Medals also were presented to Lytle, who won the runabout race on Wednesday in an Apperson car and to Salzman (Thomas-Detroit) the only finisher in the stock car race, on Wednesday. The supper was the occasion for felicitation on all sides, and the guests passed a resolution thanking the American Automobile Association for its service, the manufacturers, photographers, newspaper men and everybody else. The only dry feature of the supper was that the menu "suffered" considerably on account of Georgia being a prohibition State. Even this harshness was softened somewhat by referring to cocktails as "your choice of soft drinks," and substituting "prohibition beer" (ginger ale) instead of wine, while rye (bread) and soda (crackers) took the place of the genuine articles. "Black coffee for sobering" and "Sham pain on Ice (water), topped off the menu, with a satirical "Too bad—isn't it," as a final flourish.

Although no official figures have yet been given out, it is thought that the two days' meet will be an "even break," so far as finances are concerned. Including the building of the big grandstand, parking stalls, fences, and so forth, and oiling the race course, the meet cost the Savannah executive committee approximately $15,000. It is thought that the receipts will about meet this expense.



GOV. HOKE SMITH DELIVERING HIS ADDRESS; STRANG ON HIS RIGHT

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CANADA FLOCKS TO TORONTO SHOW

Many Cars Staged and Leading American Makers Among the Exhibitors—Railroads Display Active Interest.

With a total of 66 exhibitors, more than half of whom display cars, Canada's annual automobile, motor boat and sportsmen's show opened in the St. Lawrence arena, Toronto, Saturday night last, 21st inst. This year's exhibition is attracting more notice than former shows as the various railroads are taking an active interest to the extent of exhibiting and offering single rates from all parts of Ontario to Toronto. Because of the railroad excursion rates many visitors from outside points have been attracted to the show, more than five hundred certificates having been presented for redemption the first day. The show is held under the auspices of the Ontario Motor League, which has a membership upwards of 400. Among the exhibitors are:

Ford Motor Co., Automobile & Supply Co., Dominion Automobile Co., Oldsmobile Co. of Canada, Canada Cycle & Motor Co., Hyslop Bros., Ltd., McLaughlin Motor Car Co., George N. Pierce & Co., Packard Motor Car Co., Maxwell-Briscoe Motor Co., Cadillac Motor Car Co., Mitchell Motor Car Co., Stevens-Duryea Co., Dayton Motor Car Co., Darracq Motor Co., Studebaker Bros. Co. of New York, Renault Freres, Napier S. F. Edge, Ltd., Ferro Machine & Foundry Co., S. F. Bowser & Co., Diamond Rubber Co., Dunlop Tire & Rubber Goods Co., Canadian Puncture Proof Tire Co., George A. Haw, Premier Motor Co., Randall-Faichney Co., Auto Igniter Co., Roberts Motor Co., International Carriage Co., Motz Tire Co., Reo Motor Car Co., Comet Motor Car Co., Winton Motor Carriage Co., Kissel Motor Car Co., Premier Motor Mfg. Co., and Royal Motor Car Co.

Debut of Native Car at Omaha.

The third annual show of the Omaha Automobile Association, held in the Auditorium, Omaha, Thursday, Friday and Saturday last, 19th, 20th and 21st insts., brought out one new car, the only one manufactured in Nebraska. The Fuller, as it is called, is a four-cylinder water cooled machine, employing friction transmission and shaft drive, and is made by the Angus Automobile Co. of Angus, Neb. The other cars on exhibition are: Franklin, Pilain, Delahaye, Moline, Columbus, Buick, Reo, Holsman, Oldsmobile, Maxwell, Stanley, Stevens-Duryea, Babcock Oakland White, Stoddard-Dayton, Ford, Pope-Hartford and Jackson.

Fresno "Society" at Dealers' Show.

For a town with so few dealers and by the same token a limited number of agencies, the first show held by the six dealers of Fresno, Cal., March 12, 13 and 14, was an ambitious effort. In all there are eight dealers in the inland town, but as only members of the newly organized Fresno Automobile Dealers' Association were allowed to exhibit, the show was limited to six exhibitors of cars. The opening night was termed "Society Night," when the dealers charged one dollar admission and 'got away with it," too. The cars shonw were: White, Maxwell, Oldsmobile, Buick, Pierce-Arrow, Tourist, Mitchell, Elmore, Locomobile, Ford, Reo, Rambler.

New Haven Show Well Attended.

Despite stormy weather the annual show of the New Haven (Conn.) Automobile Dealers' Association opened in Music Hall that city Wednesday night last, 18th inst., with a large crowd in attendance. The show continued all week, one day's receipts being given to the poor of the city. The hall was tastefully decorated with flags, bunting and potted plants, more than 150 of the last named being distributed about the room. Neither the Maxwell nor the Stoddard-Dayton cars were shown, as Harry B. Tuttle, the local agent, could not secure sufficient space. In consequence he rented two stores on the main floor of a building a few doors west of Music Hall where he held open house all week. The cars shown in Music Hall were: Locomobile, Apperson, Clement-Bayard, Pope-Waverly, Franklin, Stevens-Duryea, Buick, Babcock, Studebaker, Cadillac, Oldsmobile, Reo, White, Corbin, Thomas, Atlas Compound Schact and Pope-Toledo.

Utica Man Wins Franklin's Prize.

The solid gold 21 jewel watch offered by the H. H. Franklin Mfg. Co., as a prize for the Franklin agent who submitted the best ten reasons why an automobile buyer should select the Franklin, has just been awarded to Irving R. Gardinier, superintendent of the automobile department of C. H. Child & Co., Utica, N. Y.

The contest lasted for four weeks, 57 contestants taking part. Their ten reasons varied in length from 10 words to 2,500 words. All were carefully examined by a committee consisting of H. H. Franklin, president of the company; John Wilkinson, chief engineer, and F. R. Bump, sales manager.

Thomas on Taxicab Mission to Pacific.

E. L. Thomas, of the E. R. Thomas Motor Co., is on the Pacific coast chiefly on taxicab business. It is stated that he had organized a cab service in San Francisco and that a similar project is under way in Los Angeles.

Automobile Show for Salt Lake City.

Salt Lake City is to have an automobile show in Auditorium roller skating rink in that city. It will open on March 31 and continue through the week, closing April 4.

WALKER WESTON AT ROCHESTER

Aged Pedestrian an Exhibit of Great Interest at Local Show—The Cars that Were in Evidence.

With Edward Payson Weston, the venerable pedestrian, who surprised the world by walking from Boston to Chicago some time ago in record-breaking time, is the feature exhibit the Rochester Automobile Club held its first annual show in Convention Hall, Rochester, N. Y., Wednesday, Thursday, Friday and Saturday of last week, March 18th to 25th inclusive. None of the crudity usually attendant to first attempts was manifested at the Rochester club's exhibition. The electrical display was well worked out. Because of the limited floor area the placing of the exhibits on the ground floor necessitated a systematic arrangement. In the center of the hall was a large rectangle, with an aisle for spectators around each of its four sides, and another bisecting it at right angles. Through the center of the rectangle was a line of white Corinthian columns with an arch surmounting the dividing aisle. Each of the columns had at its top a cluster of electric bulbs, while wires of suspended bulbs ran diagonally from the center to the corners. Green and white, the club's colors, were displayed lavishly, but in pleasing harmony. Weston, the pedestrian, was the feature of the Gearless exhibit, a car of this make having accompanied him on a part of his long march to Chicago last year. Among the cars displayed were the following:

Gearless, Thomas Flyer, Thomas-Detroit, Columbia, Elmore, Packard, Jackson, Mitchell, Maxwell, Stoddard-Dayton, Pierce-Arrow, Stevens-Duryea, Locomobile, Selden, Pope-Waverly, National, Earl, Jewel, Buick, Peerless, Corbin, Aerocar, American, R. & L., Lambert, and Holsman.

Another Car for Street Cleaners.

The Department of Street Cleaning of New York has obtained permission from the Board of Aldermen to purchase, without public letting, an automobile to cost not over $3,500. Last December, Dr. Bensel, at that time street cleaning commissioner, notified the sinking fund commissioners that the department had more automobiles that were required for its needs; the result was that a Lozier touring car was transferred from the street cleaning to the health department. Now, however, that the snow has gone and the pleasant days and evenings of summer are approaching, the need of another car is sadly felt, so the Lozier company have been directed to furnish another of their touring cars. The car to be furnished has been carefully and particularly selected, and according to some reports is likely to prove an object of considerable interest.

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AMERICAN ENTRY REACHES 'FRISCO

Thomas Car Completes First Leg of New York-Paris "Race" in 42 Days—Foreign Contenders Still Tinkering.

With Harold Brinker at the wheel, the Thomas car, the only American entry in the New York-Paris "race," rolled into San Francisco on Tuesday last, 24th inst., and it is expected that it will be shipped by boat to Alaska to-morrow or the next day. The voyage across the American continent had occupied 42 days. The "race" started from New York, February 12, and while it has proven rather amusing as a race, it has been a strenuous struggle that has tested both men and machines. Of the six starters, two quit—the Sizarre-Naudin, which lasted only 96 miles, and the Motobloc, which was entrained at Omaha.

An accident, variously reported as affecting the differential, the steering gear and the driving gear, had delayed the Thomas at Stone Cabin, between Ely and Goldfield, Neb., on Thursday. Extra parts had to be brought out from Tonopah, 57 miles distant, and the incident delayed Goldfield's celebration of the arrival of the only American contestant. By Saturday, Beatty, Nev., was reached, when, instead of taking the proposed route over the Santa Fe and San Pedro lines, Brinker followed the shorter and more mountainous route to Mojave, Cal., and so to Bakersfield, which was reached after forced runs, day and night, on Sunday. Fresno was left behind on Monday, and the 100 mile run into San Francisco accomplished the following day without incident.

A mud hole west of Church Bluffs, Wy., held the Zust car in its clutches all of Thursday night, and until a Union Pacific work train had been side tracked on Friday, long enough for its crew to lend sufficient tackle and brawn to extricate it. The total delay amounted to some 40 hours. Immediately afterward, the party experienced a bitter disappointment in the refusal of the railroad officials to grant the Italians the use of the Aspen tunnel, and the right of way over the Piedmont Mountains, which has been permitted the Thomas. An attempt was made to construe this into an affair of international importance. But upon the explanation of the officials that the passage of the American car had so cut up the ballast that it had been necessary to go over it completely in order to put the road into serviceable condition once more, the matter was allowed to pass under protest. The services of the obliging railroad company were again called into requisition on Monday, however, when, only a few miles beyond Kelton, Utah, the car came to grief, and returned to face a long delay. In this emergency, a special train was supplied to take the car back to Ogden, where the U. P. shops were thrown open to it for the third time. It was re-shipped to Kelton, and again took the road Wednesday afternoon.

Undergoing the usual difficulties, the De Dion car got as far as Rock Springs, Wyo., on Monday, and there became mired outside the town. In warping it out of its berth, something went wrong with the tackle, and St. Chaffrey's right hand was injured. Press despatches under his own signature later stated that the hurt was so great as to impair his driving ability, and that he would probably be forced to give over the management of the expedition to Autran, so soon as San Francisco is reached.

Thursday of last week, the Protos car came near overtaking the De Dion at Lexington, Neb., which was reached only about four hours after the departure of the French entry. A delay pending the arrival of some much-needed tires, which had been sent to Seattle for Alaskan duty, but re-requisitioned for service in the States, however, spoiled the Franco-German speed contest which had been anticipated. Laramie, Wyo., was reached on Sunday evening after a strenuous run of 57 miles. The car is now reported to be within 100 miles of the De Dion, at Green River, Wyo.



THOMAS CAR WITH BRINKER AT WHEEL, BUMPING OVER THE TIES IN UTAH

Clubs Choose New Officers.

The following officers were elected at the annual meeting of the Norristown (Pa.) Automobile Club: President, John E. Mountain; vice-president, B. Frank Stritzinger; secretary, Edwin S. Nice; treasurer, Louis E. Taubel; directors, F. M. Jacquith, R. A. Jackson, Harry A. Wlison, and F. B. Wildman.

Dr. S. T. Davis was re-elected president of the Lancaster (Pa.) Automobile Club at the annual meeting last wek. The other officers elected were: Vice-president, Martin Kinports, Ephrata; treasurer, Dr. P. P. Breneman, Lancaster; secretary, J. D. Rider, Lancaster; directors, H. M. Hillegas, Columbia; Dr. J. F. Trexler, Lancaster, and H. C. Shock, Mount Joy.

The Automobile Club of Cincinnati has elected the following officers for the ensuing year; President, Dr. C. L. Bonifield; first vice-president, C. Gordon Neff; second Jr., C. E. Bultman, Paul Cerkamp, Dr. A. Dr. L. S. Colter; treasurer, Harry L. Manss; consulting engineer, E. J. Carpenter; board of governors, G. W. Drach, Val Dittenhofer, Jr., C. E. Bultman, Paul Verkamp, Dr. A. B. Heyl and Louis Merkle. The club has a membership of 242.

Will Again Climb Sport Hill.

The Automobile Club of Bridgeport, Conn., will, as usual, hold its annual hill climbing contest on Memorial Day. This announcement was made last week after a conference with the selectmen of Easton, who agreed to allow the club the use of Sport Hill at that place on the morning of May 30th. Rules and classes will be announced later.

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KING CARNIVAL AT INDIANAPOLIS

Dealers Hold Open House for the Week—Exciting Hill Climb Held and Big Parade to Come.

Indianapolis's seventeen agencies and nine manufacturers are this week holding an open house show or "spring opening," as they term it. The carnival week should have opened on Monday, 23d inst., with a decorated parade, but because the weather forecaster prophesied rain it was postponed until Wednesday, though not until 50,000 persons had congregated in the downtown district to witness the spectacle. The services of the weather forecaster will be dispensed with in the future because it did not rain. All the agencies along Indianapolis's "row" are tastefully decorated.

The feature on Tuesday was a big hill climb held up the sharp incline known as Michigan hill, northwest of the city. Thousands of spectators lined the course, which is exactly four-tenths of a mile long, and some exciting sport was their reward. Howard Hodson, driving a Stoddard-Dayton car won three of the five events, and in the class for cars listing between $2,750 and $3,500, made the fastest time of the day, 37⅘ seconds. C. P. Brockaway, driving an Overland, a locally-made car, was the victor in the class between $1,000 and $1,800, and W. B. Peterson, Buick, made the fastest time in the event for cars listing under $1,000. The feature was the small difference in times made by all the competing cars in each event, as shown in the following summaries:

Cars listing at $1,000 and under—Won by W. B. Peterson, Buick, 0:48⅗; second, Frank Menthorn, Ford, 0:56; third, O. G. Mayers, Reo, 1:03⅕; fourth, Bert Corbet, Maxwell, 1:03⅗; fifth, D. B. Sullivan, Lambert, 1:24⅕.

Cars listing from $1,000 to $1,800—Won by C. P. Brockaway, Overland, 0:50⅗; second, Guy Simonds, Stoddard-Dayton, 0:51⅖; third, Harry Knight, Buick, 0:55; fourth, C. E. Gibson, Ford, 0:56; fifth, W. W. Beeson, Auburn, and O. G. Mayers, Reo, tied in 0:57⅕; sixth Adams, Great Western, 0:58; seventh, Ferguson, Buick, 0:58⅕; eighth, P. L. Crighton, Great Western, 1:01⅗; ninth, F. M. Martindale, Leader, 1:06⅕; tenth, J. W. Lambert, Lambert, 1:10⅕.

Cars listing from $1,000 to $2,750—Won by H. Hodson, Stoddard-Dayton, 0:38⅘; second, L. E. Finch, Thomas, 0:40⅘; third, L. Markle, Oldsmobile, 0:44⅘; fourth, Frank Nutt, Haynes, 0:45⅖; fifth, Harry Knight, Buick, 0:46⅖; sixth, Frank Nutt, Haynes, 0:47⅖; seventh, A. W. Moore, Premier, 0:48⅖; eighth, F. Eisle, Oldsmobile, 0:51⅗; ninth, Miloch, Cadillac, 0:54⅘; tenth, H. S. Wilcox, Autocar, 0:55; eleventh, R. L. Sutherland, Cylde, 0:58⅗.

Cars listing from $2.750 to $3,500—Won by Howard Hodson, Stoddard-Dayton, 0:37⅖; second, L. E. Finch, Thomas, 0:40⅘; and Harry Hammond, Premier, tied; third, L. Markle, Oldsmobile, 0:40; fourth, Ray Tinkle, Marmon, 0:47; fifth, C. W. Enzland, Marmon, 0:48⅘; sixth, H. S. Wilcox, Autocar, 0:52⅖.

Cars listing at $3,500 and over—Won by H. Hodson, Stoddard-Dayton, 0:39; second, Thomas Kincaid, National, 0:39⅖; third, L. E. Finch, Thomas, 0:41⅘; fourth, J. Aitken; National, 0:42; fifth, Frank Clements, National, 0:44; sixth, G. W. Enzland, Marmon, 0:47⅖.

Motoring Sensations in Fiction.

There is a vast difference in point of view, both optical and mental, between the corner seat in the tonneau and the post of honor and responsibility behind the steering column. That is why the motorist is so frequently separated from his guest by a great wall of fear, which, in a measure, is only a barrier of experience. Difficult as it may be for the passenger to realize that his dread of some dire calamity is but a condition of mind, however, it is even more difficult for the driver to appreciate the attitude which induces this condition in one who is not accustomed to the sensations of motoring at high speed.

In "My Enemy the Motor," published by John Lane Co., New York, Julian Street presents the sensations of a direct drive initiation into an automobile existance most vividly. That the picture is humorous as well, is to be expected in the nature of things. It is a tale of a proposed tour in southern Europe, which Fate intervened to prevent. Not much as a tale, perhaps, but more as a picture, and very good as a study in mental attitude. The characterizations are terse and pointed; the descriptions take a firm hold on the nervous system of even the hardened driver; and the narrative moves as rapidly to its climax as does the exploit which it relates. The fact that it once appeared in magazine form does not detract from its amusing and entertaining quality, which makes up in tone for what the book lacks in number of words.

Milwaukee Referee Upholds a Protest.

The protest of the Cleveland Motor Car Co. against the penalization of 2680 points charged against the Continental-tired Cleveland in the Milwaukee three days reliability contest has been allowed by the referee. This decision reduces the penalty to 1430 points, and gives the car first place in Class A, for cars selling for $3,000 and over. The protest arose over a difference in the time consumed in replacing a broken front spring.

"The A B C of Electricity" will aid you in understanding many things about ignition that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

OLD BUCKMOBILE CASE REVIVED

Seaton Secures Affirmation of His Judgment Against the Late Dr. Brower—Echo of a Memorable Run.

Like an echo out of a long forgotten past was the decision handed down by the Appellate Division of the Supreme Court in Rochester, N. Y., in the case of Albert J. Seaton, respondent, versus Abram G. Brower, appellant. The decision was an order denying the motion to strike out interest reversed without costs. The judgment was modified by striking therefrom the amount of interest allowed, and as so modified affirmed, together with the new order denying motion for new trial, without costs of the appeal to either party.

The case was one which aroused considerable interest at the time of trial, as it had some bearing on the workings of the old Buckmobile Co. The first trial was held before County Judge Pritchard and a jury and was opened April 22d, 1907. Two days were consumed in the trial. The case was given to the jury, which returned a sealed verdict, awarding the plaintiff $1,000.

In opening the case it was shown that Brower was president of the Buckmobile Co., and afterwards, in April, 1904, when it was taken over by the now defunct Black Diamond Automobile company, a larger corporation, he also became president of that company. The case hinged on the memorable run from New York to St. Louis.

Seaton, then in the employ of the automobile company, was chosen to pilot a car in the run, but he at first refused to go as the Black Diamond company owed him a considerable sum of money. The evidence showed that Brower prevailed upon Seaton to make the run, pointing out that a successful journey would mean much to the company, as it would enable it to sell its stock more readily. Seaton claimed he was promised $1,000 to make the trip.

When the plaintiff rested, the lawyer for the defense said that Seaton had invented the buckmobile, "an outlandish looking machine on a buckboard," organized a company and got Brower and another into it. After speaking of the merger with the Black Diamond company the lawyer for the defense characterized Seaton as an "auto crank who would not have missed the St. Louis run for all the stock in both companies."

The evidence was very contradictory. Judge Pritchard, in charging the jury said the only thing for them to determine was whether Dr. Brower agreed to pay Seaton $1,000 for making the trip. There was no question as to the amount and the verdict should be either no cause for action or $1,000 for the plaintiff, and the latter alternative was taken by the jury.

Since the trial Dr. Brower died, and the claim is now against the estate.

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BESNARD SYSTEM IN SOLAR LAMPS

Details of the Method for Eclipsing Headlight Glare—Division of the Rays into Two Groups.

Of the several ways by which it is possible to check the illumination of the acetylene headlight in order to prevent the unpleasant and even dangerous effects of its blinding glare upon opposing traffic, the most simple and obvious possess the disadvantage of temporarily impairing the usefulness of the lamp. In the Besnard system, the American rights to which recently

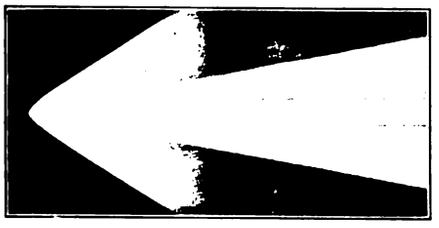
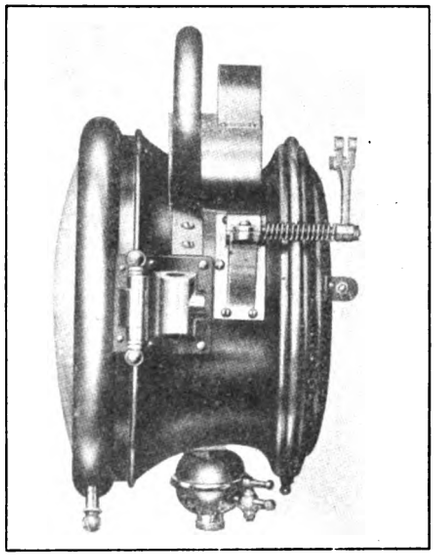


Fig. 1

were secured by the Badger Brass Mfg. Co., Kenosha, Wis., and applied in somewhat modified form to the Autoclipse and Solarclipse lamps, this advantage is developed, that the throttling of the penetrating and dazzling beam of light which is reckoned the undesirable feature of all lamps of the plain searchlight type, does not in the least affect the illuminating power of the lamp within the restricted field immediately in front of the car. The very evident advantage is that the driver of the car, while enabled to protect other users of the road from the confusing effects of the long distance rays of light, is still enabled to guide his car intelligently, since the road immediately before him is brilliantly illuminated.

In order to accomplish this very desirable effect, the light thrown from the lamp, instead of being concentrated in a single beam, focused for either very long or very short projection, is divided into two independent beams. The first is intended solely for illuminating the immediate foreground, and is a wide-angle distribution of a portion of the light emanating from the flame. The second comprises a highly concentrated beam, thrown directly through the other and projected to a great distance for



THE SOLARCLIPSE LAMP

the purpose of illuminating the road at a considerable distance from the car. The effect is thus practically that of two lamps, one for long distance and the other for short distance illumination. The way in which the light is distributed is made clear by the Solar people in their catalog just issued, which renders possible a better understanding of the Besnard system.

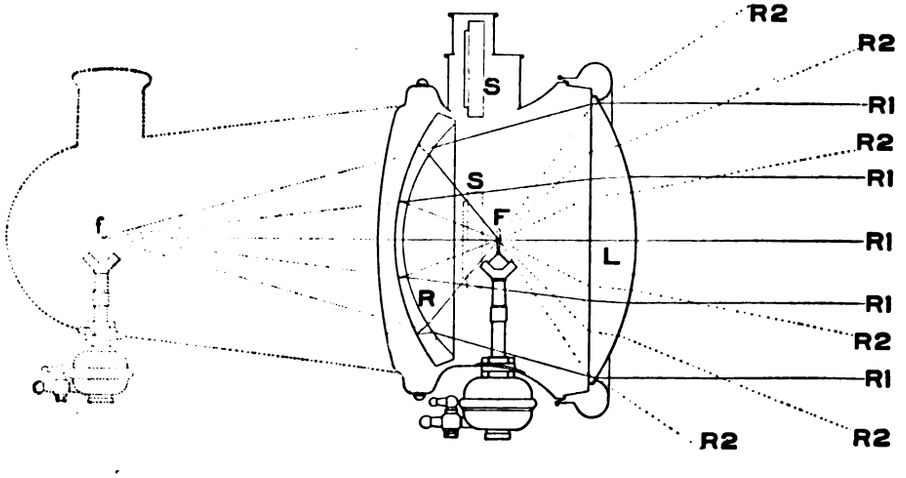


Fig. 2

The manner in which the light is distributed is shown by Fig. 1. In Fig. 2 the principle of the system is illustrated. The rays emanating from the front of the flame, F, are caught by the plano-convex lens, L, and distributed over the wide field directly before the car, as shown by the rays, R2, but without developing any of the blinding effect which is the unpleasant feature of the average searchlight. These rays are permanent, and constitute the broad and mild beam shown in Fig. 1. The rays from the back side of the flame, F, are reflected from the hyperbolic mirror, R, back to the lens to form the concentrated long-distance beam of light, R1, shown in the center of Fig. 1, as covering the wheel tracks indicated by the two parallel lines in the center of the picture.

Without the special combination of hyperbolic reflector and lens which is known technically as a "hyperlenticular" combina-

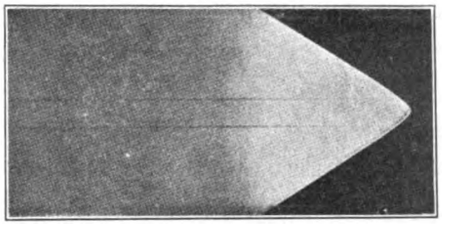


Fig. 3

tion, a much greater depth of lamp would be required in order to secure an adequate focal distance between flame and lens. How long a lamp would otherwise be required to secure the same projection of the long distance beam, is shown in Fig. 2, by the dotted lines and the indicated position of the equivalent flame at f.

The difference between the Autoclipse and Solarclipse lamps develops in connection with the reflection and refraction of the long distance beam, as it has been called. In the Autoclipse lamps, the French method of construction is employed, the reflector, R, comprising merely a shallow metalic mirror, which is purely a reflector. In the Solarclipse lamps, on the other hand, a special form of lens mirror reflector is employed which performs the double function of reflection and refraction, thereby devel-

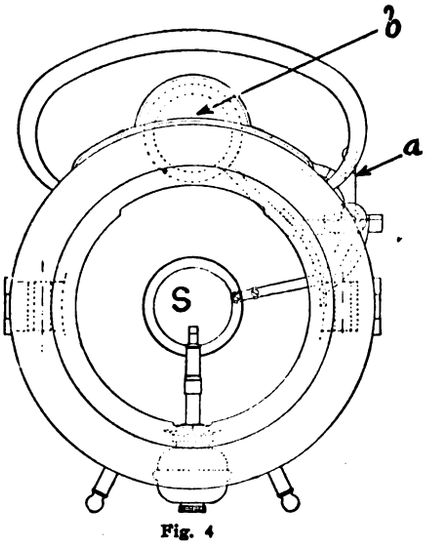


Fig. 4

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oping a higher degree of efficiency in handling the light, and also possessing certain mechanical advantages not to be found in the plain reflector, such as the very important non-corrosive property of the lens mirror.

Once the method of distributing the light is understood, the way in which the eclipsing of the long distance rays is brought about is easy to comprehend. All that is required is to interpose an opaque shutter between the back side of the flame and the mirror in order to eliminate the rays which are, for the moment, undesirable. To this end, the small shutter, S, Fig. 2, is brought down from its normal position in the heat hood to the position shown by the dotted lines. The resulting effect is shown in Fig. 3, where the light from the front of the flame only, is seen to be distributed through a very wide range, but with sufficient diffusion to dispel any blinding glare. The power of the flame, so employed, is sufficient to illuminate the road distinctly to a distance of 35 yards from the lamp, giving a clear view of the road, sufficient for running at low and moderate speeds with perfect safety. With the shutter raised to its normal position, on the other hand, the central beam is carried to a distance of 320 yards, developing the bright, white spot in the road, which is essential for ordinary running at night.

The mechinical construction of the lamp is further brought out by the front view shown in Fig. 4, in which the eclipsing effect is shown where the shutter is dropped into the position shown at S. Ordinarily, a spring suffices to hold it in the position, b, in the heat hood, from which it is displaced when desired, by means of the small lever, a, which is worked by a Bowden wire from the driver's seat. By a special method of connection, both headlights are manipulated by a single control wire, and in unison. The arrangement of the external lever and spring are shown in the side view of the complete lamp, which also emphasizes the compact construction which is brought about through the use of the hyperbolic mirror.

Little Clips that Require Care.

It is essential that the little clips which are so frequently employed to bind together the outer leaves of the ordinary elliptical springs, be held firmly in position, and that in the event of their being broken or lost, they be replaced immediately. If this is not done, the stress, when the spring is subjected to a heavy rebounding action, is brought almost wholly on the inside leaf, and unless more than strong enough for its ordinary work, there is great danger of its being broken.

"The A B C of Electricity" will aid you in understanding many things about ignition that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

EASING THE CLUTCH ENGAGEMENT

Application of Suction Dashpot for Checking Motion—Progressive Action in Picking up the Load.

While there are certain drawbacks to every form of friction clutch which has yet been put upon the market, or used in connection with the motor car transmission, it is undoubtedly the case that the moving cause in nearly all improvements which

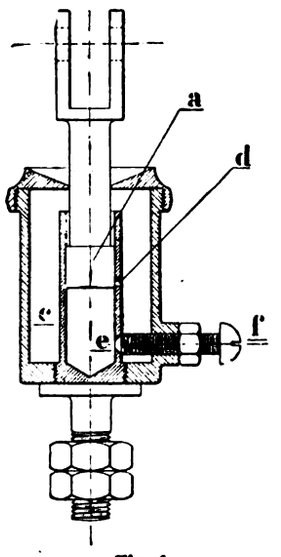


Fig. 1

have been made, as well as in the development of the newer types which have in some measure replaced the old leather-faced cone type, has been the difficulty of obtaining a smooth engagement when picking up the load from rest. Skilful drivers never have

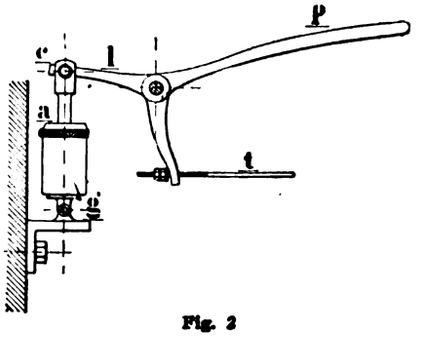


Fig. 2

been wont to complain of the performance of the cone clutch in this respect, nor have they habitually failed to obtain good running results with it. Hence it would appear that in many respects, some device calculated to ensure the same method of engagement as is used by the skilled driver as a result of this training, would go a long way toward solving the problem of successful clutching of the load, regardless of the type of clutch employed.

One of the most obvious expedients which could possibly be employed in this connection is the use of the plain suction dashpot for checking the motion of engagement, and ensuring its progression at a stated rate. Such a system has been developed recently by the firm of Outhenin Chalandre, Neuilly-sur-Seine, France. It comprises nothing more nor less than a small attachment which may be connected to almost any form of clutch, and which serves merely to check the rate of engagement according to the adjustment of the escape valve upon which its action depends.

As shown sectionally in the accompanying Fig. 1, it will be seen that the device consists principally of a small cup or shell, fitted with a screw top and containing a small cylinder mounted centrally within it in such a way as to leave an annular space within the outer shell. The plunger, a, is connected by means of the clevis on its stem with some movable portion of the clutch actuating mechanism, while the shell is attached permanently to the frame of the car. A small orifice part way up in the side of the inner cylinder, shown at d, permits a certain amount of the fluid contained in the device to circulate as the plunger moves up and down, until the latter closes the opening. Thereafter the flow between the cylinder and the outer space, c, must take place through the small hole, e, which is regulated in area by means of the screw, f, and its lock nut.

Attached to a clutch of the familiar Panhard type, the arrangement is as shown in Fig. 2, P, being the piano-type of pedal, t, the actuating arm connected to the drag rod which disengages the clutch, and l, the braking arm, to which the shock absorber, or clutch regulator, a, is attached by means of its plunger, at e. The shell of the device, g, is mounted on the dashboard of the car, as shown, and is articulated to provide for a certain amount of radial movement.

When the clutch is to be engaged, instead of releasing the pedal gradually, as must be done ordinarily, the operator merely lifts his toe entirely clear of the pedal, when the spring is permitted to draw in the clutch until the small orifice in the cylinder of the device has been passed by the plunger, when the resistance to its motion becomes sufficiently great to slow it down to the desired rate. Thereafter, the engagement proceeds at a controlled speed and is rapid or slow, according to the adjustment of the regulating screw. The action is precisely the same as is employed in the ordinary form of hydraulic door check. The acceleration of the car is thus regulated to a uniform degree, and all starting jolts and shocks eliminated.

To Guard Against Short Circuits.

The length of a battery's life depends on how much current is taken from it. A short-circuit will quickly kill even a new cell. It is important, therefore, that in connecting up batteries or in putting them on a machine, care be taken not to let any metal parts touch the binding posts of the cells.

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COMMERCIAL VEHICLE PROBLEMS

Limitation of Permissible Axle Load—How Met in Four Wheel Drive and Multiple Unit Trains.

What is admittedly the principal limitation of the commercial motor vehicle results from the double consideration of the unsatisfactory state of the tire problem, and the inability of the average highway to withstand the concentrated pressure of very heavy loads. Thoroughly successful commercial vehicle design, therefore, must be carried out with definite regard to a certain limiting permissible axle load. How this factor affects the transportation of very heavy loads, and how it is likely to work out in the development of motor haulage on a large scale, is considered by Joseph A. Anglada in a paper read before the Society of Automobile Engineers.

"Within the past few years it has been proven by users in general that, aside from the advertising value of commercial automobiles, which exists in few cases at present, the employment of auto-trucks of over 6,000 pounds load capacity is not as profitable as the employment of smaller vehicles," remarks the authority in question. "The rapid depreciation of the rubber tires in general use, and of the power generating apparatus, necessitating frequent repairs and replacements, are the chief reasons for the above state of affairs.

"A few vehicle manufacturers and users have attempted to solve the problem of expensive tire renewals by the use of various types of wooden and combination tires, and the use of resilient wheels. However, considering that by far the greater number of commercial automobiles of all types are still using and being equipped with rubber tires of the same general type used for the past eight or ten years, it seems that solid rubber tires, expensive as they are in all respects when used on large vehicles, are at present the most satisfactory solution of the problem. . . . .

"Another objection to the use of large trucks is their inability to exert sufficient tractive effort under all conditions of loading and road surface. As a remedy, some manufacturers furnish sand boxes for delivering sand under the driving wheels, as in railroad practice, while others endeavor to overcome this difficulty by driving all four wheels. The first method is an unsatisfactory makeshift, while the latter necessitates expensive complication of the propelling and steering mechanisms, with the extra weight of these parts assisting depreciation.

"The six-wheel vehicle is a step in the right direction, but the complication inseparable from this arrangement and the expense of building and maintaining this complicated construction detracts seriously from the attractiveness of the six-wheel proposition. Unless at least four wheels are driven, the traction disadvantages of the two-wheel drive are always present. When four or six wheels are driven the objections stated above also count against this system.

"The system employing a tractor and trailers is used abroad to some extent, and has the advantage of distributing the load on a number of wheels. But the objectionable feature of having but one pair of driving wheels counts against the system; because, unless the driving wheels are provided with cleats to assist propulsion, it is impossible to haul a paying load at all times, and even with cleats the above is not possible if the road has deep sand or mud upon it. The use of cleats is objectionable because they cause the load on the driving wheels to be concentrated on comparatively small areas of the road surface, causing it to deteriorate rapidly.

"Col. Renard realized the shortcomings of the above system when he developed the road train system which bears his name. It consists of a train of vehicles, the leading vehicle having mounted upon it the power-generating, speed-controlling and steering apparatus. A shaft arranged with the proper number of universal and slip joints extends throughout the length of the train and transmits the power of propulsion to the driving wheels of each vehicle. Thus it is possible to carry a large and therefore a well paying load without having excessively large individual vehicles, causing rapid depreciation of same due to the inability of providing resilient tires or wheels or springs for carrying heavy loads. The road surface is also protected, because the unit load on same is reduced, the weight being distributed on a greater number of wheels and therefore on a greater area of road surface. In addition, rubber tires are not necessary because sufficient tractive effort is obtained by the increased number of propelling members. Steel tires may be used on the trailing vehicles because there is no mechanism except the comparatively simple propelling and steering apparatus mounted on them, and on the leading or power-furnishing vehicle rubber tires are allowable."

It seems to the writer, after studying the Renard system, that its advantages may be retained and the complication of the power transmitting and controlling apparatus reduced and these parts made more efficient by the use of a modified system. This, he describes as follows:

"The leading vehicle has mounted upon it the steering and control apparatus, a source of motive power, storage battery, steam or internal combustion motor, but preferably the latter, on account of its simplicity and small weight per horsepower. The motor is coupled to an electric generator which furnishes current to a pair of electric motors on each vehicle. The vehicles are connected by means of a bar which transmits the steering effort from the drawhead at the rear of the leading vehicle to the front axle of each following vehicle. The length of this bar and the position of the front axle are so determined in reference to the rear axle of the leading vehicle, that the entire train follows the same course when turning. The vehicles are also connected by flexible electric conductors, arranged so as to be readily connected or disconnected when it is desired to place a vehicle in or out of the train.

"Three methods of control suggest themselves: First, the ordinary method of operating the internal combustion motor at a constant speed to obtain a constant voltage at the generator, and then, by means of a series paralleling controller, connecting the fields and armatures of the motors in various combinations, virtually as done in street car and electric train service. Second, a method in which by varying the speed of the generator its voltage is varied correspondingly, causing a proportional current to flow through the motors, making their speed and torque vary. Third, a method whereby varying the voltage of the generator, by changing its field excitation, its speed meanwhile remaining constant, causes an effect similar to that of the foregoing method. It would probably be found advisable to obtain the field current for the generator from an exciter mounted on the end of the main generator shaft, to save weight, and having its output controlled by the driver of the train.

"With the two latter methods, it would also be found advisable to provide a switch for connecting the two motors on each vehicle in series combination for climbing grades and for starting when the train was fully loaded. This switch could also be used for reversing the direction of rotation of the vehicle motors.

"The generator should be designed to furnish a direct current at 220 volts and the windings should be so arranged that when the output of the generator nearly equaled the output of the gas motor, the voltage of the generator would decrease and thus decrease the current flowing to the vehicle motors. This feature, while not absolutely necessary, is desirable because at no time is it possible to overload and stall the gas motor by careless operating. For instance, consider that the motors of the train, which are 220-volt direct current series motors, are operating in multiple combination, and that the train approaches a grade which requires more power than the gas motor can furnish to the motors in multiple combination. The generator voltage would decrease and thus prevent the vehicle motors and the gas motor from being overloaded, and if the driver should persist in not operating the switch to connect the vehicle motors in series combination, the train would come to a standstill if the power required was greatly in excess of what the gas motor can supply."

The chief source of difficulty with the average vehicle of current design, is the battery, as he further points out. The motor, and in the case of the gasolene-elec-

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tric unit, the generator as well, are above suspicion, so that the only probable sources of trouble in a system of the sort in question, would be the controller and the conductors carrying the current to the various units. Such a train, in his opinion, would not weigh more than a train equipped with an entirely mechanical transmission, would not cost as much to build, and would operate more efficiently, and at a lower maintenance cost.

"In this country multiple unit road trains have been constructed by the Gibbs Engineering and Manufacturing Co., and Alden Sampson," he continues. "The first Gibbs train consisted of a power wagon and two trail wagons. . . . . The power wagon has mounted upon it a three-cylinder gasolene engine direct connected to a generator furnishing power to motors driving the rear wheels of all the vehicles. The leading vehicle is equipped with solid rubber tires and the trailers have iron tires. The speed of the train was regulated by a two-motor street car type controller so modified that by operating the drum intended for reversing the car motors, the vehicle motors, which were regular series wound electric vehicle motors, would be connected in series or multiple combination. . . . . .

"The second Gibbs train consists of a power wagon and four trailers. The power wagon has mounted upon it two three-cylinder gasolene engines driving a double commutator generator through positive clutches on the engine shafts and Morse chains. The rear wheels of all of the vehicles are driven by series motors through gearing and roller chains."

The road wheels, in particular, he calls attention to, which, he says, "are steel discs flanged at the outer circumference. The discs are riveted to bronze bushed steel hubs and steel tires eight inches broad. Speed regulation is obtained by means of a controller similar to the one used on the first train, with the exception that the controller drum generally used for reversing the car motors is in this case used to connect the two windings on the armature of the generator in series or parallel. . . . .

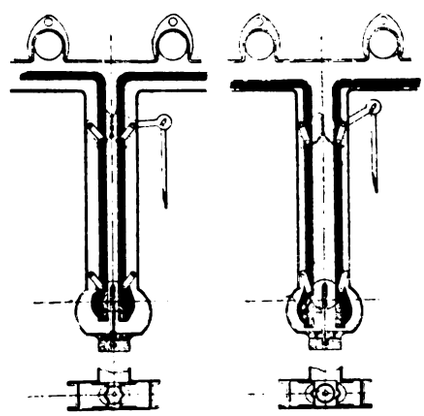
"This train was used to transport machinery and supplies from a railroad to a mine in Arizona. The route is 115 miles each way and leads through a desert and mountainous country.

"The Alden Sampson train, which was exhibited at the last Madison Square Garden show, consists of a power wagon and two trailers, the former carrying a four-cylinder gasolene motor, driving a dynamo by a silent chain. The power plant, which occupies the forward part of the vehicle, is mounted on a separate spring suspended frame, while the rear part is arranged for carrying a load. All the vehicles are of the six-wheel type, the large center wheels being independently driven on all of the vehicles. . . . . The trailers are double-ended, so that they may be operated in either direction."

ORIGINALITY IN INDUCTION PIPE

Its Modification of Throttling Action—Features Reducing Sectional Area Through Its Entire Length.

Among other confusing notions which a close study of the carburetter problem breeds, is the idea that the usual methods of throttling by restricting the area of the delivery pipe, cutting down the cross section of the gas flow at one point only, gives it opportunity to expand after passing the valve, thereby robbing it of some of its heat, and tending to cause condensation, with consequent upsetting of uniformity and general reduction in the value of the gas from the standpoint of its combustible quality. On this account, the poor running



of many motors when throttled is accounted for in a comparatively simple manner.

To overcome this difficulty, an English inventer, W. Gillett, whose Gillett-Lehman carburetter already has been described in these columns, has developed a new form of induction pipe in which the throttling action instead of being confined to the valve alone, as is ordinarily the case, has the effect of reducing the sectional area of the induction pipe throughout its whole length, thus ensuring uniform velocity in the gas for the entire distance it must travel after leaving the mixing chamber, preventing any tendency to pocketing, eliminating re-condensation, and securing permanence in the gas to a degree which is impossible of attainment with the ordinary arrangement.

As shown in the accompanying illustration, the induction pipe, at the base of which the fuel jet is located much in the ordinary way, instead of being the usual simple conduit, comprises an outer casing, within which are mounted a couple of moveable vanes running its whole length and coupled together by means of an external mechanism in such a way that the movement of a suitable lever causes them to move toward one another or apart, as the case may be, thus varying the area of the passage. Instead of being round or oval, the outer casing is rectangular in section, and the moveable vanes fit its sides tightly, so that the space enclosed between them must at all times form the conductor for the gas. When open to their full capacity, the area is nearly the same as that of the outer casing itself, but when closed, as for running under throttle, the area is considerably reduced, the upper curved portions of the vanes also rising as well as approaching one another in such a way as to reduce the working area of the intake manifold as well as the induction pipe itself.

The idea is distinctly a novel one, and though introducing an amount of complication which a year or two ago would have been thought absolutely unjustifiable by the requirements of the case, is sufficiently in line with present theories to ensure careful consideration for it. There can be no doubt that re-condensation does occur in the average manifold and to an unpleasant degree at times. Whether it is only to be overcome by some mechanical means such as this, or whether it may be obviated by some more subtle method, remains to be seen.

One Rule Without an Exception.

A rule to which there should be no exception is: "Never start the engine when the car is standing over gasolene." Frequently when filling the gasolene tank some of the fuel finds its way to the ground, either from overfilling or because of carelessness in pouring into the filler hole or funnel. To start the engine over this overflow is to invite serious trouble for it is often that sparks are discharged from the muffler when the engine races and this is especially true if the muffler contains much soot. Occasionally a leak in the gasolene pipe or tank, or maybe a carburetter float chamber in which the seat of the needle valve needs grinding, will permit of the gasolene forming in a puddle when the car is standing on the street. It is important to stop such leaks and it is better to keep the car in motion than to stand over exposed gasolene, which a match, carelessly thrown in the street, may ignite.

Precautions in Removing the Magneto.

It is so easy to remove the average, modern, high tension magneto, and the temptation is so great to dismount it whenever the least excuse presents itself, that the usual caution as to observing its timing before doing so, cannot be repeated too often. All that is necessary is to see that the driving gears are properly "spotted," and that the marks are sufficiently intelligible so that on putting the device back into place it will be possible to mesh the gears exactly as they were in the first place. A very small slip in this respect may be sufficient to upset the running of the motor and necessitate the complete re-timing of its ignition system, especially when the operator is not sufficiently well acquainted with the properties of the magneto to be able to locate the trouble at once and remedy it correctly.

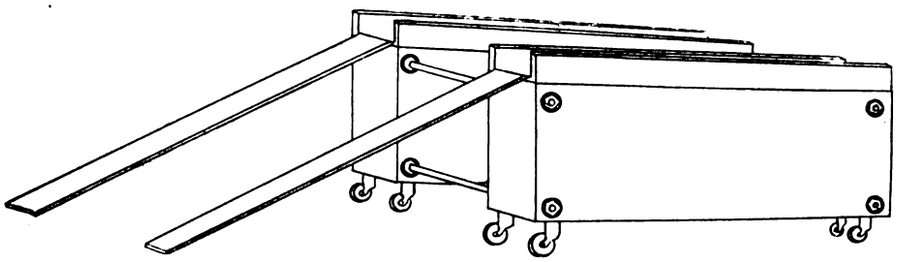
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PORTABLE SUBSTITUTE FOR A PIT

Easy and Inexpensive to Construct—May also be so Made as to Serve as a Turn Table.

No matter how accessible the parts of an automobile may be, the necessity for getting under it arises sooner or later, than which nothing in connection with the repair of a car, is more disagreeable.

While a pit offers the simplest solution of the difficulty it is not always practical for the private garage; and the small repairman frequently has not the facilities for this adjunct to his repair plant. It is, however, a comparatively easy matter to construct a device that will give the opportunities for working beneath the car without entailing the expense incident to the construction of a pit. One of the sort is shown by the accompanying illustration.



SUBSTITUTE FOR PIT AND TURNTABLE

First get two pieces of channel iron several inches wide, and of sufficient length to be two or three feet in excess of the wheel base of the car. Mount these on timbers or castings that are twelve or fourteen inches high and have an inclined approach to each channel. Place these two channels so that the distance between them is the same as the tread of the car, and then run the latter up either under its own power or by using jacks. The space that is thus gained beneath the car will be found to be sufficient to enable the repair man to work under it at great advantage. If the two structures are tied together in some manner and castors put under them, the whole will serve admirably as a turn-table or portable stand.

Uses of the Emergency Brake.

The emergency brake, as the name implies, is a brake for use in tight places where something more than the foot brake becomes necessary. But the emergency brake has other uses than that of the sudden stopping of the car.

When descending a long hill, especially if the grade is steep, the continued use of the foot brake causing an intense heating of it, and if the construction is such that a lining is employed in the brake shoe, it will be quickly destroyed by the continued friction. To prevent this destruction, which entails some expense and considerable labor in replacing the lining, it is well to alternate in the use of the brakes on steep descents. By setting the emergency in a position where it will permit of the car attaining only the desired momentum and releasing it after a short distance has been traveled, substituting for it the foot brake, and in turn releasing that before it becomes heated, both brakes are kept cool and the wear on each is reduced to the minimum, as the real destruction comes from heat rather than from service without heat. On hills that are long it is a good plan to cut off the spark and have the momentum of the car turn the engine over a few times in this way cleaning out the cylinders and cooling them. If this is done it is desirable to use caution in starting up the power, as a sudden jerk will occur unless the speed of the car is in accord with the speed of the engine.

Warming a Car with Exhaust.

The use of hot air from the exhaust to heat a motor car for winter touring is the novel scheme of J. D. Turner, a Franklin owner of Grand Forks, N. D. Mr. Turner recently made a 700 mile trip in a Franklin runabout from Grand Forks to Quincy, Ill., in the midst of a real western blizzard, but with his new heating apparatus and a closed canvas top he and his companion went through the zero weather in comfort.

The method of heating consisted of placing on the floor of the car a coil of pipes connected directly with the "main exhaust." The "main exhaust" of the Franklin carries off only about 30 per cent. of the burnt gases, and its temperature was just about right to heat the car comfortably. The remainder of the exploded gases in the Franklin passes out through the auxiliary exhaust, which opens at the lower end of the cylinder.

Causes and Effects of Overheating.

Running with too rich a mixture, too late a spark or too much throttle opening all tend to cause the same difficulty—overheating. The result in either case, must be a slow explosion, which results in a high cylinder temperature throughout the whole of the working stroke, instead of only during the first part of it, and a high exhaust temperature and pressure. The result is that the lubricant is burned from the cylinder walls before it has time to perform its proper function; that the surface of the exhaust valve becomes pitted; and that the engine tends to overheat.

DRESSING FOR LEATHER TOPS

Formulas for Preparations Adapted to Old or New Material—Improving Wear as Well as Appearance.

The competent chauffeur is one who in addition to his ability to drive the car, assumes a personal interest in its upkeep and appearance. The power plant, while it may be his chief concern, is not the only part that receives his attention, for the body and accessories require some care, and if a casual observer sees evidence of these minor parts having received it, it safely may be concluded that the entire equipment is receiving adequate care.

One of the problems that are presented to the man, whether chauffeur or owner, who desires to give proper care to every part of the car, is the method of preserving a leather top. As long exposure to the air will cause the leather to become dry, unless it receives a proper dressing, it naturally follows that in this condition cracks will occur when the top is folded—as it generally is—and when the cracks appear the surface is, of course, lost. For the treatment of leather which has begun to "go bad," a good mixture is the following:

To one pint of neatsfoot oil add a quarter of a pound of beef suet, completely melted so that no lumps remain; stir the mass thoroughly before adding a tablespoon full of melted beeswax; shake in a closed dish or can sufficiently to insure a perfect mixture, and then add one ounce of ivory black, and again shake thoroughly. Rub this on the top with soft cloths, taking care to rub the mixture well into the leather; the effect will be to cool the top and impart to it a redeeming elasticity.

In cases where the top has suffered greatly from wear or harsh treatment, it is well to obtain a first class top dressing which can be purchased ready for use or prepared in the following manner:

One pint of liquid asphaltum, one pint elastic finishing varnish, one pint of boiled linseed oil, one-half pint japan, a pint of turpentine; add to this one pound of ivory black and mix thoroughly. Use freely and rub in well.

To Start Magneto from the Seat.

Starting the motor from the seat when high tension magneto ignition is employed, has been considered, if not impossible, at least so difficult as to be hardly worth considering as a possibility. In a recent foreign invention in this line, however, just this feature is made possible by the adoption of a ratchet driving gear for the magneto armature, whereby it may be rotated by hand to obtain the first one or two "shots," the gear afterward picking up the shaft at the proper point in the cycle to insure correct firing sequence.

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LAW TO PERMIT HILL CLIMBING

Massachusetts Senate Reports Favorably on Bill to Authorize the Closing of Roads for Contests.

There is now a probability that the Worcester Automobile Club will hold another climbing contest on Dead Horse Hill during next summer. The committee on roads and bridges, of the Massachusetts Senate has reported favorably on a bill providing that local authorities may grant permits to persons to drive automobiles and motorcycles in hill climbing contests during specified times on specified parts of the highway at any rate of speed. The bill is practically the same as section 9 of chapter 52 of the Revised Statutes, which authorizes the mayors of cities and selectmen of towns to close public roads temporarily for bicycle races.

The senate committee gave a hearing on this bill on Friday, 6th inst., when the Worcester Automobile Club, which had asked for such legislation, was represented by Daniel F. Gay and others. Mr. Gay told the committee that the road on Dead Horse Hill is an abandoned one on the Boston and Hartford turnpike which has been fixed up by the club at an expense of about $1,500 for the purpose of automobile hill climbing. It is no longer a public thoroughfare between any particular towns, and was little used before the Worcester Automobile Club repaired it.

On two occasions the club arranged climbing contests, the last being two years ago, when approximately 10,000 people assembled. Sixty patrolmen were engaged to keep the street clear, but it was found that they had no authority. All they could do was to suggest to the spectators that they "kindly step back" to make room for the automobiles to come up. No body of men has the authority to close a highway for an automobile contest. Hence the club asks fhat the Legislature confer upon the mayor and board of aldermen of a city and the selectmen of a town authority to give special permits for special occasions to close the streets during a specified time, and upon a specified stretch of road. It was the purpose of the Worcester Automobile Club to make the law general so that any city or town might benefit from it, though the club has no other direct interest in it than to secure conditions of safety for its own contests on Dead Horse Hill. If the bill is rejected there will be no contest, otherwise the club may arrange one for this year.

Start of a Four Years' World Tour.

One of the most extensive automobile tours of the world was begun last week when Mr. and Mrs. H. A. Hover left Los Angeles in a Maxwell car for a four years' tour of the world. Starting from Los Angeles they will go south across the line into Mexico, returning to Los Angeles by a different route. Going north, they will follow the coast road to San Francisco and from there will go on to Portland and Spokane, via Seattle. The next jaunt will be eastward, through Idaho, Montana and the Dakotas, turning north to Winnipeg into Canada. Hover says he will be the first to drive an automobile from Winnipeg to Toronto. From Toronto they will go to Chicago, by way of Buffalo, turning back to New York. From New York the car will be shipped to Naples. The first winter the Hovers expect to cover the Riviera thoroughly and will go into Algeria and the Nile region. The summer will be spent in Northern Europe, touring in England, Scotland, Ireland, and Sweden. By the winter of 1910 the Hovers expect to have seen most of Europe and will then go on to India, and from there to China, Japan and the Philippines. The trip is being made purely for pleasure and Hover states that he will travel five years if four is not enough to see all the places of interest in the world.

Minneapolis to Revise Ordinances.

All automobile ordinances now in force in Minneapolis are to be repealed and a new ordinance is to be adopted. This move results from representations made to the city council through Attorney Will, representing the Minneapolis Automobile Club, that a new ordinance recently adopted is not consistent with former ordinances passed. It has been decided to increase the price for tags from 50 cents to $1, on the ground that a tag that would be acceptable to owners of fine cars cannot be furnished for less. The Minneapolis Automobile Club is to furnish a draft of the proposed new ordinance.

Cab Driver's Costly Carelessness.

Reckless taxicab drivers would do well to remember the fate of the Parisian driver who ran into and killed a professor. The chauffeur was not the worst sufferer for he was sentenced to only three months' imprisonment, but the company figuratively got the axe. It was made to pay damages of $10,000 to the victim's widow, together with $5,000 to an unmarried daughter and $1,400 to each of four other children.

Bar Harbor Again Bars Automobiles.

Bar Harbor (Mount Desert Island, Maine) will remain closed to the automobile for another season. At the town meeting held last week in the town of Eden, of which Bar Harbor is a part, the citizens voted on the proposition to permit automobiles to be run on what is known as Bay View drive, which was defeated by a vote of 415 against 174.

"The A B C of Electricity." Price 50c. The Motor World Publishing Co., 154 Nassau St., New York City.

BIG REGISTRATION FOLLOWS SHOW

Sudden Increase in Demand for Massachusetts Licenses—Statistics of the State's Income from Motorists.

There has been a notable increase in the number of automobiles registered in Massachusetts within the past three weeks, which by some people is attributed largely to the influence of the recent show in Boston. E. J. O'Hara, who has charge of the automobile department of the State highway commission, states that the week before the show 314 automobiles were registered; during show week the number went up to 438; and last week the figures climbed toward 600. Motorcycle registration also took a jump. Sixteen new dealers were registered while the show was in progress, and eight others have taken out certificates since its close.

Since the first of January, when the law required that all motor vehicles be re-registered, the highway commission has issued about 6,900 certificates for automobiles, 300 for motorcycles and 275 for dealers. The demand for private operators' licenses has hardly begun and only 346 new licenses of this sort have been issued. The number of professional chauffeurs, however, is growing rapidly and it begins to look as if the demand for operators for hire would be more than supplied. Since the beginning of the year 231 new chauffeurs' licenses have been issued and 460 have been renewed. Up to the middle of the month, when the figures from the automobile department were last tabulated, the commission had taken in more than $40,000 from this department. Of this amount over $38,000 was for registration of cars and under $2,000 for licenses. The commission is preparing for a heavy rush during the next six weeks.

No Dinky Runabouts for Police Head.

When Superintendent of Police Regan, of Buffalo, heard that the Board of Aldermen is in favor of buying a $900 car for him he laughed.

"Think of me riding in one of those dinky little runabouts," he is quoted as saying, as he threw out his chest and contemplated his stature. "Why, I would have to let my feet hang over the dashboard. Huh, $900 wouldn't buy the wheel of the kind of an automobile that is needed for the police department. What we need is a big touring car that will carry a half dozen officers. No doll carriage for me! Reckon I'll stick to the old nag. He can't negotiate the New York to Paris race course, but he always gets round in time for oats. The police department needs a big car, which can carry enough detectives to handle a case in time of emergency. If the city's money is to be spent upon an automobile one should be provided that will prove serviceable."

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The Week's Patents.

877,613. Driving Gear for Motor Road Vehicles. Percy G. Tacchi, Acton, London, England. Filed Nov. 18, 1905. Serial No. 287,956.

1. The combination with a casing, of an internally threaded sleeve carried by said casing, a driven shaft passing through said sleeve, an externally threaded sleeve mounted on said shaft with its threads in engagement with said internally threaded sleeve, a rack and pinion adapted to rotate said internally threaded sleeve on its shaft to move the same longitudinally, a clutch cone adapted to rotate the said internally threaded sleeve, means for preventing longitudinal movement of said clutch cone or said last mentioned sleeve and a driving shaft provided with a second clutch cone with which said first mentioned clutch cone may be engaged by the longitudinal movement of the sleeve.

877,709. Automobile Lift. Charles W. Gearing and William J. McGee, Franklin, Pa. Filed Aug. 29, 1907. Serial No. 390,595.

1. In an automobile lift, the combination with the floor of a garage, of channels let into said floor and adapted to receive the wheels of an automobile, and means for raising said channels.

877,711. Instrument for Indicating Speeds, Distances Covered, and the Like. Eugene V. Gratze, Leytonstone, England. Filed Oct. 16, 1906. Serial No. 339,221.

1. In combination, a substantially annular stationary magnet, a revolving core positioned between the poles of the magnet, a metallic casing adapted to embrace the core and extending beyond both sides thereof, spring means for controlling the rotation of the casing, indicating means operated by the casing, and means for rotating the core.

877,714. Combined Power Transmission and Automatic Mechanism for Motor Driven Vehicles. Thaddeus W. Heermans, Evanston, Ill. Filed Jan. 22, 1907. Serial No. 353,519.

1. In a motor driven vehicle, the combination with the motor driven shaft, the driven axle and power transmission connections between said motor shaft and driven axle, of an automatic brake mechanism cooperating with said power transmission connections, means whereby the brake mechanism is automatically operated to arrest the vehicle upon tendency of the load to drive the vehicle, and means for disconnecting the driven axle from said brake mechanism at a point between the axle and brake mechanism.

877,726. Vehicle Rim. Walter J. Nordlund, Oakland, Cal. Filed March 4, 1907. Serial No. 360,440.

1. A wheel rim comprising a fixed section and a movable section, said section having opposed interlocking cam surfaces, and a rotatable member operable between the fixed and movable sections and engaging both sections whereby one section may be moved axially relative to the other section.

877,730. Explosive Engine. Herbert R. Palmer, Cleveland, Ohio, assignor to The Palmer Oil Engine Company, East Cleveland, Ohio, a Corporation of Michigan. Filed Aug. 28, 1903. Serial No. 171,041.

1. In an explosion engine, in combination, a cylinder and piston, an explosion chamber upon said cylinder, a valve in said explosion chamber, means for conveying motor fluid adjacent to said valve, an injector plunger adapted to cross and thereby block the outlet for said motor fluid and at the same time inject an explosive charge of such fluid into said explosion chamber through said valve, and a variable cam for controlling said injector.

877,750. Motor Vehicle. Walter G. Windham, London, England. Filed Jan. 23, 1906. Serial No. 297,427.

1. In a motor vehicle the combination of a chassis, a front seat secured thereto and suitably disposed for the driver, longitudinal runners on the chassis, and a rear half-body detachable from the chassis by sliding rearwardly upon the runners, substantially as set forth.

877,762. Operating Device for Motor Vehicles. Pierre A. Darracq, Suresnes, France, assignor to Societe A. Darracq & Cie. (1905) Ltd., Suresnes, France. Filed March 29, 1907. Serial No. 365,323.

1. In a device for controlling change speed, reversing and brake parts for motor vehicles the combination of a frame, springs on said frame, a driving axle secured to said springs, a change speed a reversing and a braking device upon said axle, a pivoted balance beam on said frame, a fork connecting said balance beam and said axle, means upon said beam for pivotally supporting a plurality of levers, means connecting said levers to the devices upon said axle and means to enable the driver to operate said levers.

877,835. Combined Steering and Driving Axle. Paul Daniel, New York, N. Y. Filed March 12, 1907. Serial No. 361,930.

1. A motor vehicle, comprising a cross member adapted to support the vehicle body, a steering knuckle pivotally connected to each end thereof, wheels rotatably mounted upon said steering knuckles, a driving axle comprising a plurality of sections, one of said sections extending through one of the steering knuckles and having an enlarged end, and the other of said sections being connected thereto by a universal joint within said expanded end and anti-friction bearings intermediate said expanded end and said steering knuckle.

877,856. Spring Tire. Thomas J. McCarthy, Los Angeles, Cal. Filed March 27, 1906. Serial No. 308,197.

1. A wheel tire comprising concentric bands, one embracing and radially movable over the other and one of said bands fixed to the wheel, circumferentially arranged springs radially seated within and between said bands, fittings secured between said springs and said bands and provided with lugs at each corner, and two sets of diagonally disposed springs arranged side by side between each two of said radial springs and connected at their opposite ends with said lugs from the upper corner of one fitting to the lower corner of the other fitting.

877,924. Air Compressor Mechanism for Self-Propelled Vehicles. Ernest E. Hampton and Cicero G. Smith, Palisade, Colo. Filed Oct. 1, 1906. Serial No. 336,965.

1. In air compressor mechanism for vehicles, the combination with a moving part of the vehicle, of an air receiver mounted on the vehicle, and means actuated by the air in the receiver for automatically rendering the compressor mechanism inoperative when the air has reached a predetermined limit of compression within the receiver, said means comprising a cylinder, a piston

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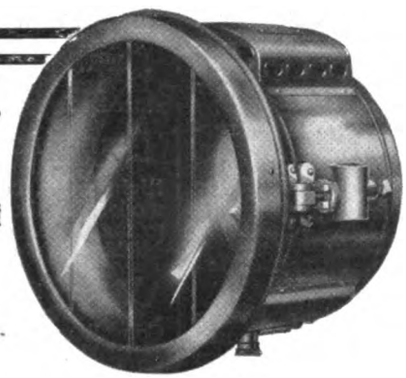
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in the cylinder, a spring acting on the opposite face of the piston from that which is engaged by the air, and a rod connected with said piston and having a part adapted to engage the compressor mechanism for the purpose set forth.

877,961. Tire Construction. William F. Stearns, Batavia, N. Y. Filed Feb. 15, 1906. Serial No. 301,191.

In tire construction, the combination of a channel iron with an elastic tire having a laterally projecting, circumferentially extending flange at each side of its base; a series of separate, quadrilateral, metalic, open bodied cross pieces spaced apart one from another, and embedded crosswise of and in the tire, with their end walls in contact with the inner walls of the side flanges of the channel iron, and the outer surfaces of their end walls substantially uush with the outer surfaces of the tire flanges; and a circumferentially extending retaining wire around each tire flange, the wires binding the ends of the cross pieces against the inner side walls of the channel iron flanges, and the transverse portions of the metallic cross pieces being substantially in a transverse plane of the tire, co-incident with the outer surfaces of the tire flanges.

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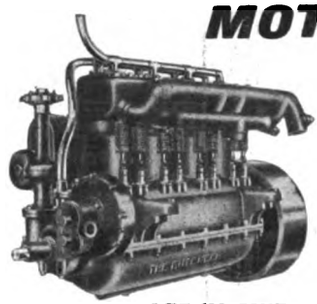
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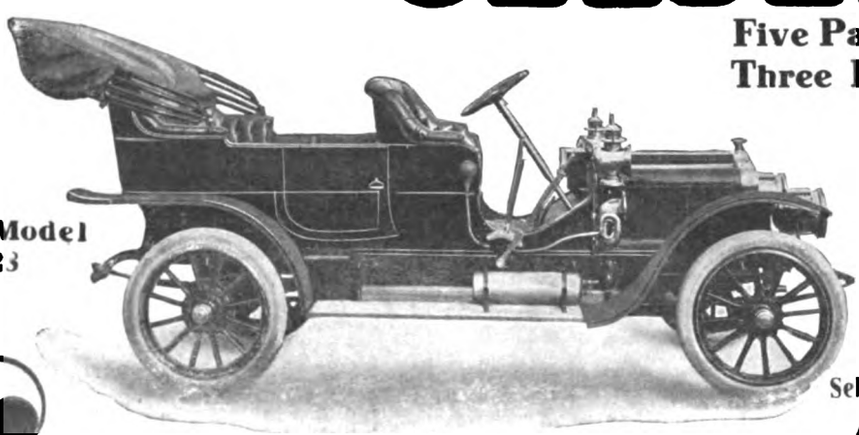
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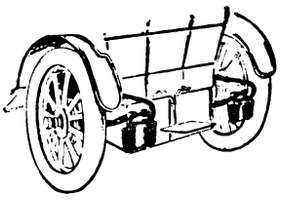
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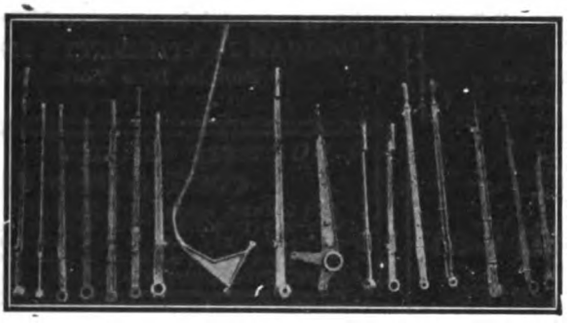
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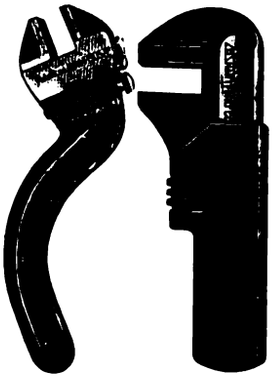
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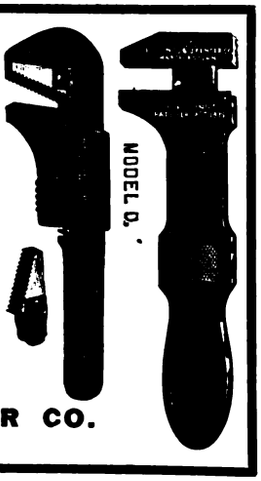
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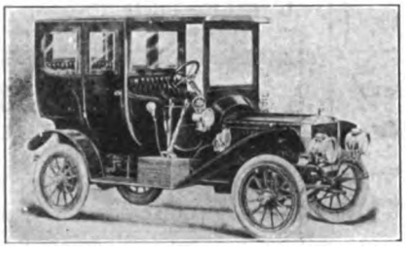


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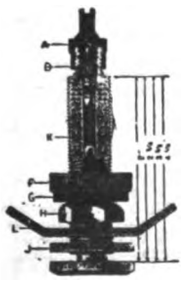
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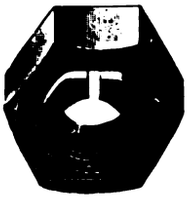
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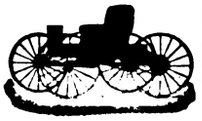
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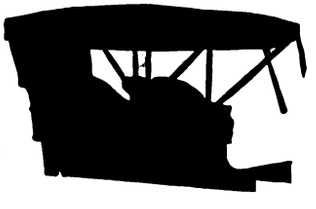
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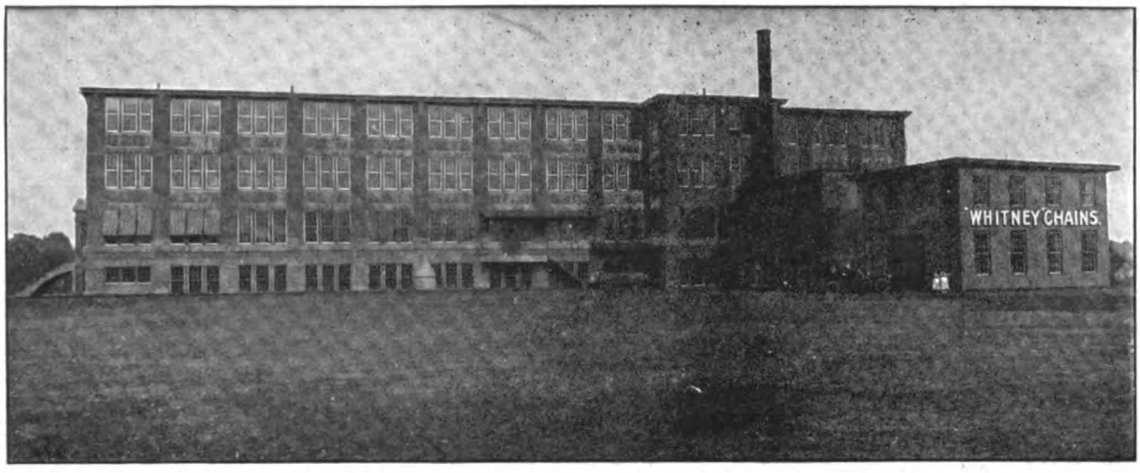
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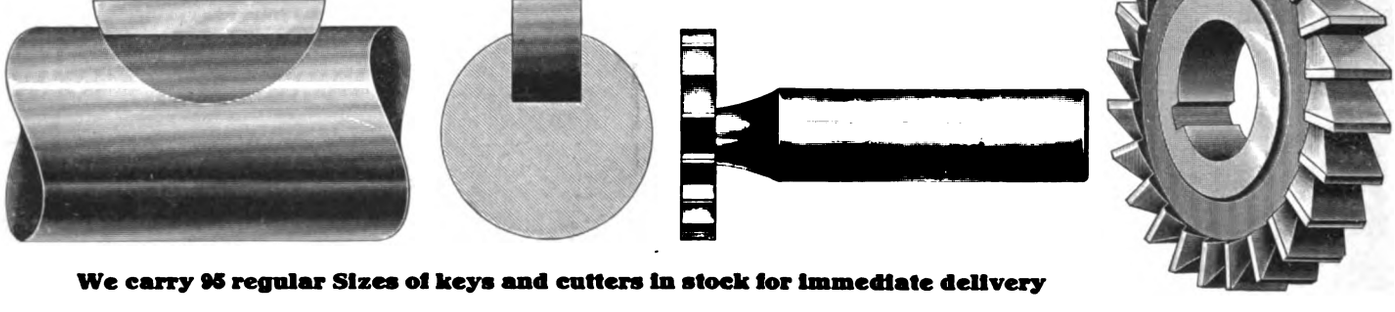
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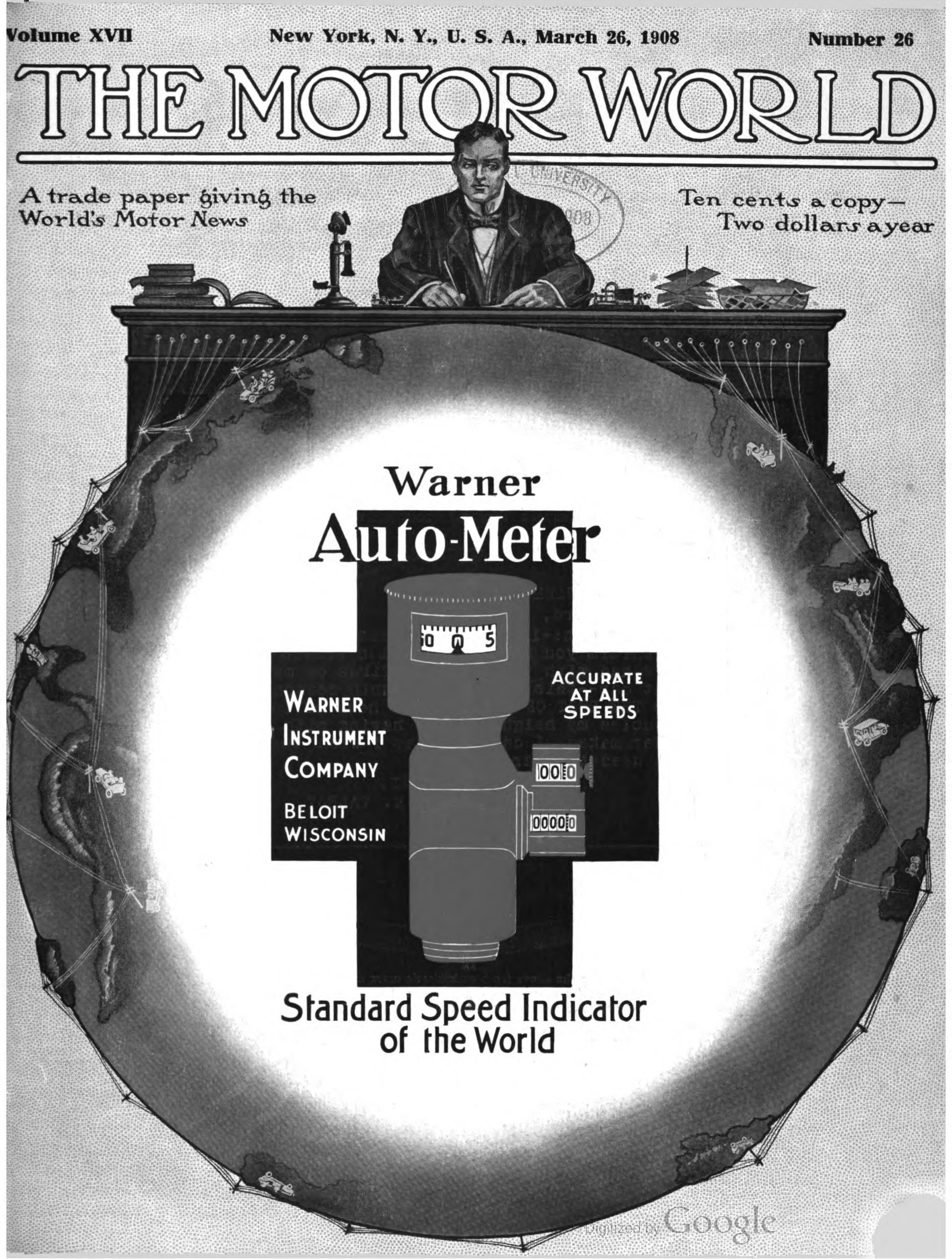
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Volume XVII New York, N. Y., U. S. A., March 26, 1908 Number 26

THE MOTOR WORLD

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"I Wish They All Used Hartford Tires"

THE ARCHES
WIANNO
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September 17, 1907.

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Gentlemen:-It gives me great pleasure to inform you how successful a season I have had with the Hartford Tires on my Fiat car--this being the fourth season AND THE BEST OF ALL. When I hear of the troubles my neighbors are having with other makes, I can only say I wish they all used the Hartford.

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GEO. N. TALBOT.

¶Our files literally bristle with letters like the above from enthusiastic users of Hartford tires. Especially do they dilate on the quality, on the freedom from trouble common to other tires, and general satisfaction. ¶Hartford Midgley Tread Tires afford the resiliency of ordinary tires and prevent the dangerous side slip.

MILLIMETRE SIZES FOR FOREIGN CARS

The Hartford Rubber Works Company, Hartford, Conn.

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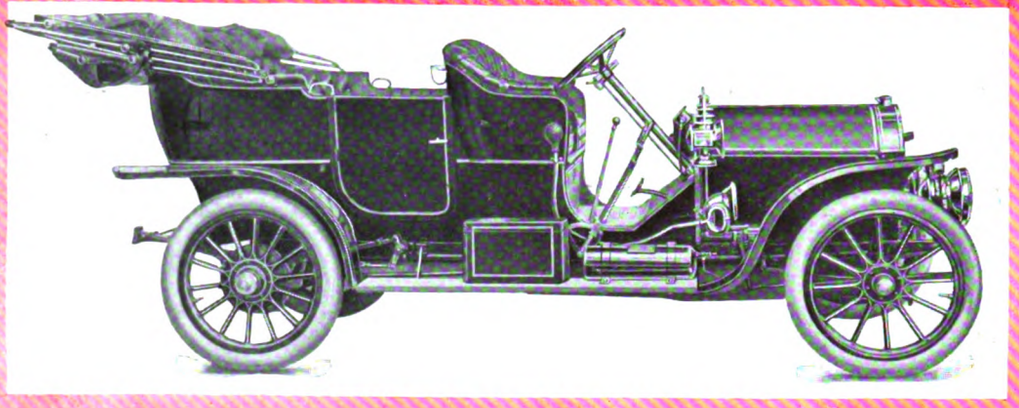
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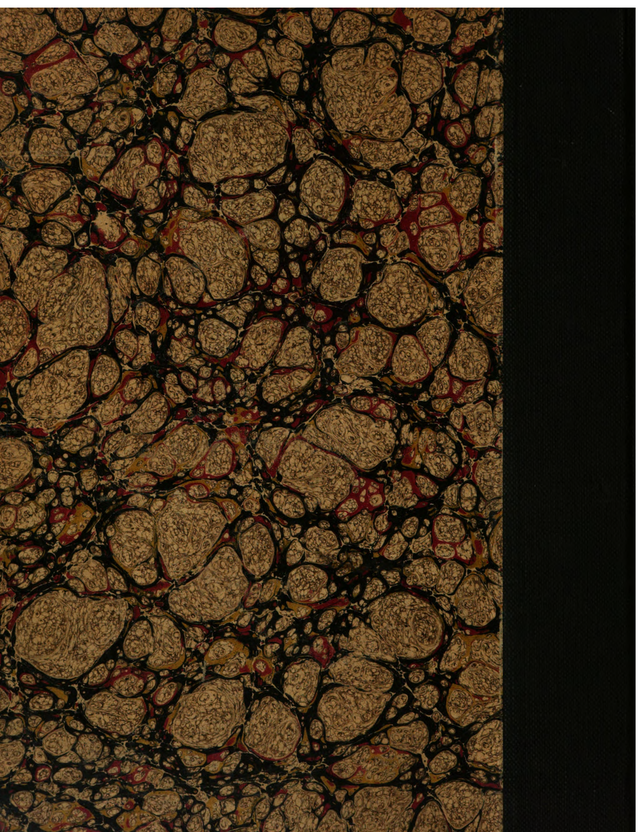
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